TRAINING METHODOLOGY TO HANDLE LARGE SIZED CLASSES IN PRIMARY SCHOOLS

[Inservice Training Package for Teacher Educators and Teachers working in primary schools with large sized classes developed by Regional Institute of Education, Bhubaneswar in collaboration with West Bengal Board of Primary Education, Calcutta]

REGIONAL INSTITUTE OF EDUCATION
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PREFACE

Though the rate of enrolment has gone up tremendously in primary schools located in rural areas in recent years as a result of higher social demand for primary education, the flow of teachers to primary school system is comparatively slower due to various reasons. Consequently, the problems of primary schools with large sized classes have attracted our attention Though the existence of primary schools with large-sized classes is undesirable, the phenomena may continue for some more time to come The primary teachers of our country are already handling the problems associated with large sized classes. Both the teachers and learners of such schools are under tremendous stress and the teachers are desparately searching solutions of multiple problems they face in day to day classroom The objective of developing a contextual training methodology is to help the teacher educators and teachers to understand the situation and to derive approproate tools/ interventions/ strategies/ practices through multiple training mode.

Training methodology to handle large sized classes in primary schools has been conceived and developed by the faculty members of Regional Institute of Education, Bhubaneswar and experts of West Bengal Board of Primary Education, Calcutta jointly through field visits to twenty primary schools with large - sized classes located in Orissa and West Bengal, field interaction with teachers and supervisors/ inspectors, in house faculty discussion, two review workshops held in Calcutta and Bhubaneswar and the reflective interaction between President West Bengal Board of Primary Education and RIE faculty In the review meetings RIE faculty,

teacher educators, selected headmasters of primary schools, national awardee primary school teachers, faculty teaching language in general college, supervisory / inspectorate staff and consultants of West Bengal Board of Primary Education, Calcutta provided excellent feedback to various modular units

Prof. Bhabesh Moitra, President, West Bengal Board of Primary Education, Calcutta not only acted as a ' think-tank ', his total involvement in the programme, constant guidance and monitoring deserves special appreciation.

Training methodology to handle large sized calsses in primary schools contain 10 modules which could be used as training package for inservice training of teachers as well as for training of teacher educators / master trainers. Module No. 10 is a self learning module which could be sent to teachers / teacher educators before the commencement of training. Other modules could be transacted during the training session in order to enhance the knowledge and performance competencies of teachers and teacher educators Module No. 7 should be utilised for teacher training programme only The teachers are to practice the development of similar activity sheets during the training sessions. The content of the activity sheets however could be utilised for preparation of text-books and workbooks The training package in the present form is a reviewed draft which could be further refined by field testing and interaction with teachers, teacher educators / master trainers. We welcome suggestions from all quarters for improvement.

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Objectives of Training Methodology to handle Large-sized Classes in Primary Schools

The specific objectives of formulation of training methodology to handle large sized classes is to help the teacher educators at primary level and the primary school teachers

1 to understand the conceptual model of training methodology for teachers working in primary schools with large sized classes

2 to conceptualise the methodology of identifying the training needs of teachers of primary schools with large sized classes

3 to understand the problems related to teaching - learning in primary schools having large sized classes

4 to conceptualise the dynamics of multiple learning mode for management of large sized classes in primary schools

5 to practice the exempler strategies through multiple learning modes with reference to different subject areas and goals of learning during training session

6 to practice development of no cost learning materials relevant to concept development in different subject areas

7 to develop and use the tool of evaluation to measure the effectiveness of training programme

Conceptual Model of Training Methodology for Teacher's Working in Primary Schools with Large Sized Classes

[Module 1 should be despatched to teachers/ teachers educators before the commencement of training programme. Teachers and teacher educators should read this module at their own space and in own time]

Overview

The interventions strategies/methodologies formulated by teacher training institutions at primary level have failed substantially to improve the classroom practices, learner's achievement and learning environment in primary schools with large sized classes

Difficulties with Existing Classroom Interventions/ Strategies

- Existing classroom intervention strategies/methodologies are global - not contextual in the sense that training methodology applicable to primary teachers of normal primary school may not be relevant to the teachers handling a large sized class

- Teacher competencies have been perceived in a 'global' way and little effort has been made to identify context specific teacher competencies relevant to their roles they are suppose to perform in primary schools with large sized classes Consequently, primary teachers of such schools face difficulties in performing their job

- Training designs prepared by experts who seldom have experience / direct knowledge of the problems faced by teachers and learners in actual classroom of such schools do not benefit the teachers to solve problems Primary teachers of such schools are not involved in training design formulation

- Little effort has been made to design training methodology based on research findings on the problems of teaching - learning in primary schools with large sized classes. The conclusions/ findings/ implications of research studies on teaching-learning in large sized class context have been structured in such a way that teachers do not get much direction The conclusions/implications/findings should be communicated in a way that it is understandable to the teacher The implications of research findings should be stated in an implementable form. Research based and field tested interventions/ strategies to improve the teaching – learning of primary schools with large class size should be the major focus of training sessions

- During training programme operationalisation of interventions are seldom focussed. it is not enough to tell the teacher that 'What is to be done' (Interventions/ Strategies) The trainer should also elaborate ' How an intervention is to be broken into action points ? How a particular acton is to be initiated ? What are the modalities of doing a particular task? (operationalisation of strategies). What are the difficulties associated with operationalisation of interventions/ strategies? How to remove these difficulties?

- Even if the interventions are identified and their mode of operationalisation are focussed the teacher may not be motivated

to implement them due to poor working conditions, low perceived status, non - availability of materials and lack of community cooperation. Lack of motivation, poverty, rural deprivation and adverse socio-economic factors are constraints for success of classroom interventions Even if the teacher is motivated, socio-cultural/ economic context of a locality, the administrative and supervision milieu is such that teacher is demotivated to implement the strategies/ innovations Consequently, routine teaching-learning is practised. This is' the point where teacher gets deprofessionalised. This is a peculiar Indian situation. What stands in the way to motivate the teachers in such a scenario ? In Indian context the goal of the school, the goal of learning and organisation of class room, gets distorted, remains flexible and varies across socio-cultural and economic settings It is not the question of how interventions are available to the teacher but how to build capacity in the teacher in identifying difficulties in operationalising the strategies and prepare the action plan Culturally constructed meanings are attached to teachers role performance, instructional tools, pedagogic strategies and level of community participation. An intervention may enhance teaching - learning in one setting and may not enhance in another setting. Interventions should be context specific

* Existing training methodology/ strategies do not perform diagnostic, remedial, interventionist and preventive roles

* There is a lack of professionalism in formulation of training designs in the sense that contextual training needs are not assessed through field study. Field is considered as an important source of

learning/need assessment Reflection on the current conditions of classroom practices is the critical requirement. Classroom profile, school profile and teacher profile preparation should be taken up during assessment of training needs.

* Interventions strategies and contextual teacher competencies are not included in training content

* Existing training designs only focus cognitive competencies (knowledge competencies) and /or content related competencies of the teacher The performance, competencies (demonstrative ability), managerial competencies and contextual competencies are neglected

* There is a need to review hierarchical caskade training model since tremendous training loss is involved during the process of training transfer from master trainers to resource persons and from resource persons to trainees. It is possible to train the trainers and teachers simultaneouly.

* Training of trainers is done through discussion and podium instruction by resource persons/ master trainers Trainer's are not involved in preparation of training package/modules and materials

* 'One short training' for example, once in one year / two years will not be able to sustain the impact of training and training loss is inbuilt in such training

* Training materials do not promote participatory, interactive, reflective, brainstoring interactions among participants

- Training institution or training college based training do not promote orgnisation of training in actual contxtuality Problems of each teacher is unique and action setting is unique. Therefore, there is a need to organise training in the primary schools with large sized classes or in a venue nearer to such schools. School based, BRC/ CRC based, cluster resource centre based training is the emerging focus

Training Redefined :

Modern approaches to training is 'learner centred', 'activity based', 'demonstration based' 'field based' and 'research based'. Modern training appreciates that learning is inseparable from working. Every job is to be learnt before it could be performed successfully Modern training emphasises assessement of training need of the teachers working in primary schools with large sized classes through realistic tool, development of training package, transaction of training through activity based/ demonstration based/ field based modes and effective evaluation of training transaction.

Identification of Training Needs

Identification of training needs is the first step of formulating any training methodology The need assessment will help us to link training to needs and goals of the school, to facilitate formulations of training/ learning objectives and to decide the training content and training transactional modes After identification of training needs, the needs are to be arranged in order of priority Then it is to be identified which needs/ problems could be solved through training In order to arrive at a realistic analysis of training needs, there is a necessity to make an analysis of tasks related to the job of the teachers in primary schools with large sized classes, the

problem they face in that context and to formulate inverventions/ strategies to solve the problems On the basis of contextual task analysis, it is easy to identify the knowledge, skills, and attitude requirements of the teacher and the interventions/ strategies/ methodologies to be adopted to perform the job. Task analysis on the job could be undertaken through discussion, workshop, administration of questionnaire/ inteview schedule or adminstration of diagnostic need assessment tool through field visits

Formulation of Specific Training Objectives

Linking training objectives to objective of teaching - learning will enhance training quality. Training objectives should be measureable/ testable and achievable Formulated training objectives are to be definied in terms of knowledge, skill and attitudes (KSA) to be developed in teachers.

Training Package

A training package consists of a number of training modules. Training modules are structured and sequenced written/ printed learning units which may be used either for self-instruction by the teacher/ trainee at their own space and may be supplemented by discussion undertaken through multiple learning mode or media or practice work undertaken during training period. Training modules contain :

* training objectives / outcome
* training content
* training transaction mode
* use of materials/ learning tools
* practicals/ trainee's activities concerning identification of interventions/ strategies, operationalisation of interventions, identification of

difficulties, providing remedial situations to meet gap in performance competencies

- Self-evaluation of knowledge competence's and trainer's evaluation of performance competencies

- Training content should provide guidelines as to how the package is to be used Conceptual/ theoratical aspects of teacher competencies, multiple activities/ skills/ competencies to be acquired by trainees, multiple training methods, interventions/ strategies may be presented through self-learning training package Operationalisation of strategies, identification of difficulties, development diagnostic tools, development remedial and enrichment lessons, action plan to remove the difficulties, demonstrations about processes should be practised during training session

Training Transaction Modes / Training Techniques

In order to conduct training, we are to search appropriate training strategies/ techniques from the list given below and apply appropriate mode/ techniques during training sessions

- development of awareness, role perception/attitude through self-learning package/self-study of awareness package

- participatory and activity based techniques

- discussion through brainstorming session/participatory group work/individual feedback, participative problem-solving

- use of multiple interacton mode during training between

  - resource persons - individual participant
  - resource persons - group
  - participant - participantion

* group reflection - group action - group formulation of strategies

* skill development through practices and feedback

* demonstration by expert teacher as role model in school/ CRC/ BRC/ school clusters

* flexible schedule of broadcasting TV/radio

* development of materials, guidelines, activity structures through group work and logistic support

* school - based inservice programme through team work and involvement of teachers in planning, execution and evaluation of training

* combination of self-organised learning with distant education modes and contact session

* acquisition of teaching skills through microteaching sessions

* case study

* obtaining feedback on training package/training materials through workshop

* group training of teachers in using folk songs, poems, games, performing art for facilitating joyful learning

- dissemination of success stories/ innovations
- individual/group assignments
- self-study of printed material / self-learning package supported by audio/ video programmes with varying amount of face to face contact / turorials
- field visits/ analysis of problems following action research approach

What should be the Focus of Training Session ?

Mere identification of strategies to handle teaching- learning in large sized classes context is not enough The teachers are to acquire competencies in operationalisation of strategies in terms of specific activities/tasks to be performed with reference to concept attainment and development of abilities, skills / competencies through different types of learning situations, such as whole class teaching, group learning, self-learning/ drill etc in primary school Activity identificaion, instructions to conduct the activity, specification of strategies for doing different activities such as remedial instruction group learning, self-learning/ drill should be the major focus of emerging training strategies The teachers are to be oriented in visualising constraints/ difficulties in operationalisation of activities/ tasks Teachers should be trained in preparing action plan to remove the constraints

Training Session should highlight

- performance competencies/ action competencies
- demonstrative ability of the teachers through teacher/ vedio demonstration

- group discussion/ reflective discussion on operationalisation of multiple strategies, difficulties associated with operationalisation, action plan to meet the defeciencies
- development of teaching - learning materials
- preparation of self - learning activity sheet/ instructions for group learning etc

Training Materials/ Learning Tools

Involvement of trainees in the production of training materials is essential A good training package/ training module should be field tested The feedback of the concerned trainees on the package/ modules / materials should be obtained What is the procedure of obtaining feedback of the trainees on materials? Both print and non-print mode of training materials should be presented during training sessions Training material - audiovisual aids job aids etc should be presentd durign training The trainees should be trained in the methodology of preparing learning aids utilising no-cost local resources / waste materials for group learning, for self - learning/ drill and teaching aids for the use of teachers

Training Schedule

Scheduling of in-service training should highlight

- interaction on participants expectation from the programme
- statement of training objectives
- training content divided into units / modules
- trainnee s activities defined with reference to training transaction mode
- training evaluation procedure
- duration of sessions

- field testing of training materials developed
- media support and aids

Materials may include training package, OB materials or any other non-print materials/teaching aids or technology support

Evaluation/ Measurement of Training

Evaluation/ Measurement of Training may should note of following aspects

- trainees evaluation of trainer
- trainees evaluation of training design
- trainee's assessment of training action
- impact of training on achievement level
- impact of training on school environment/ organisation

Training of Trainers

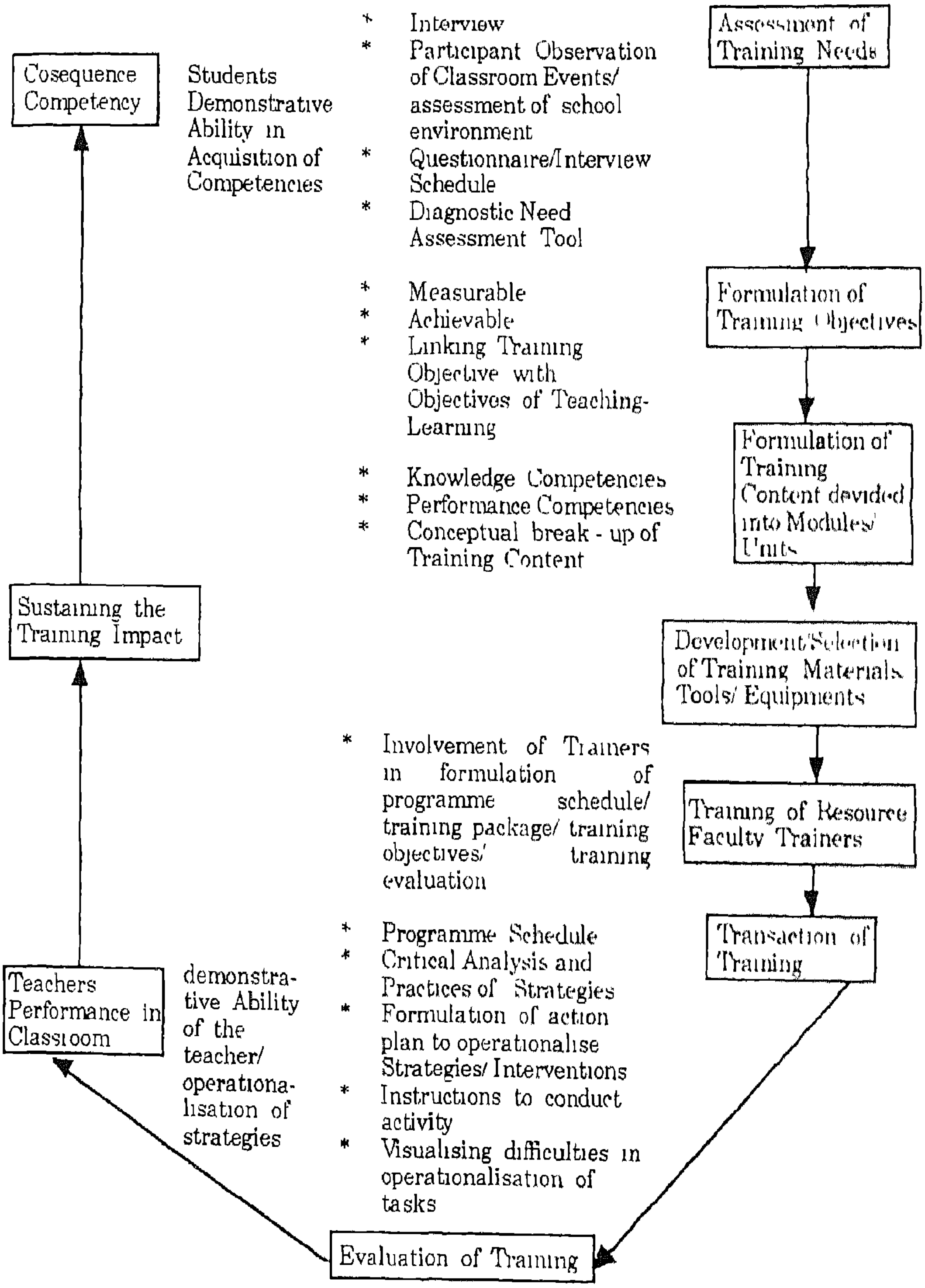
The trainers are to be involved in preparation of training package modules A guidelines for trainers should be developed, A few senior experienced primary teachers may also be used as trainers There is a need to formulate rules / regulations for training of trainers

Modes of Effective Training

Recurrent training' instead of 'one shot training' is usually found to be more effective Again, field - based, training has been found to be more effective School based, cluster resource centre/ block resource centre based training instead of resource institutions based training would be more effective Again, it has been found that demonstration-based training is more effective than lecture based training by resource persons

Flow Chart - 1

Conceptual Model of Phases of Training Design for Orientation of Primary Teachers teaching in Schools with Large Sized Classes


Assessment of Training Needs
Formulation of Training Objectives
Formulation of Training Content devided into Modules/ Units
Development/Selection of Training Materials Tools/ Equipments
Training of Resource Faculty Trainers
Transaction of Training
Evaluation of Training
Teachers Performance in Classroom
Sustaining the Training Impact
Cosequence Competency

- * Interview
- * Participant Observation of Classroom Events/ assessment of school environment
- * Questionnaire/Interview Schedule
- * Diagnostic Need Assessment Tool

- * Measurable
- * Achievable
- * Linking Training Objective with Objectives of Teaching-Learning

- * Knowledge Competencies
- * Performance Competencies
- * Conceptual break - up of Training Content

- * Involvement of Trainers in formulation of programme schedule/ training package/ training objectives/ training evaluation

- * Programme Schedule
- * Critical Analysis and Practices of Strategies
- * Formulation of action plan to operationalise Strategies/ Interventions
- * Instructions to conduct activity
- * Visualising difficulties in operationalisation of tasks

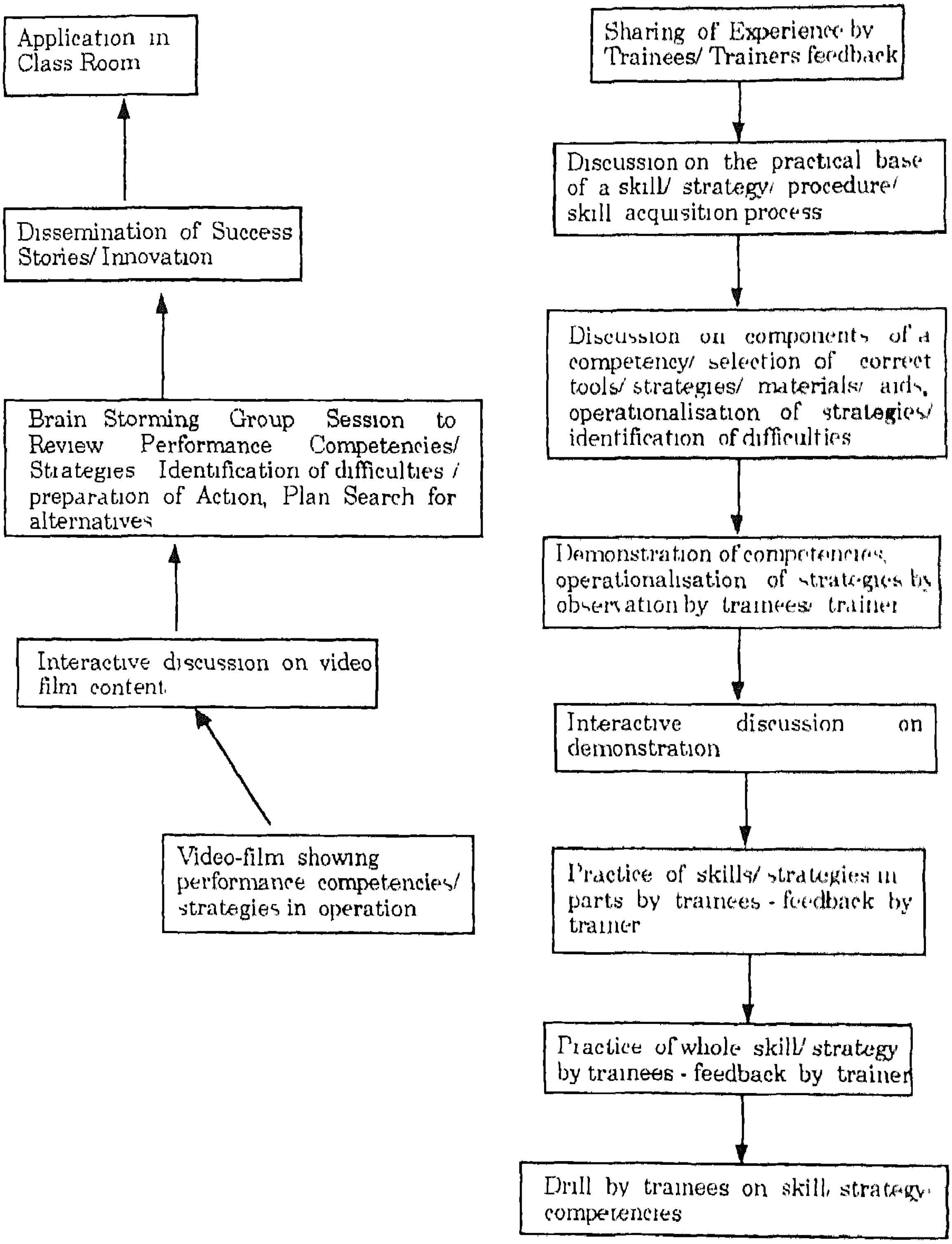
- * Trainees Evaluation of the Trainer
- * Trainees Evaluation of Training design
- * Impact of training on achievement level
- * Impact of training on school environment / organisation

demonstrative Ability of the teacher/ operationalisation of strategies

Students Demonstrative Ability in Acquisition of Competencies

Flow Chart - 2

Conceptual Model of Phases related to Development of Performance - based Teacher Competencies during Training Transaction


Sharing of Experience by Trainees/ Trainers feedback
Discussion on the practical base of a skill/ strategy/ procedure/ skill acquisition process
Discussion on components of a competency/ selection of correct tools/ strategies/ materials/ aids, operationalisation of strategies/ identification of difficulties
Demonstration of competencies, operationalisation of strategies by observation by trainees/ trainer
Interactive discussion on demonstration
Practice of skills/ strategies in parts by trainees - feedback by trainer
Practice of whole skill/ strategy by trainees - feedback by trainer
Drill by trainees on skill, strategy, competencies
Video-film showing performance competencies/ strategies in operation
Interactive discussion on video film content
Brain Storming Group Session to Review Performance Competencies/ Strategies Identification of difficulties / preparation of Action, Plan Search for alternatives
Dissemination of Success Stories/ Innovation
Application in Class Room

Implementation of Training Methodology

Succesful implementation of training methodology for teachers of primary schools with large sized classes would depend on :

- Capacity building of primary teacher training institutions like DIET/PTTI/ BRC's CRC's by NCERT/RIE/SCERT/DPEP and NGO's in the form of
  - training capacity
  - capacity in development of materials
  - capacity in action research/ interdisciplinary research/ participatory research etc.
- linkages and networking between institutions to perform multiple roles/ functions
- support system . fundings/ facilities/ resources/ equipments, technology/ materials
- partnership between .
  - teachers
  - parents
  - community functionaries/ community resources institutions/ NGO's
  - teacher training institutions at primary lavel (DIET/PTTI)
  - resource institutions like NCERT/RIEs/ SCERT/ and University Education Departments
  - government departments of education
- inter-desciplinary linkage
- teacher policy to imporve/ enhance working conditions/ job satisfaction/ motivation which include

- recruitment policy
- marketing policy
- transfer - posting policy
- pay policy
- promotion policy
- trainingn policy
- incentive policy

* monitoring and supervisions of implementation and linkages

Self Learning Activities

Search Answers to following questions

1. What strategies could be adopted to motivate the teachers of primary schools with large sized classes to improve the classroom practices and learning environment ?

2. Could you identify your training needs in the context of improvement of teaching- learning in large sized classes ?

3 Within the frame work of existing constraints could you identify modalities of imparting recurrent training to the teachers ?

PROBLEMS OF PRIMARY SCHOOL WITH LARGE-SIZED CLASSES

Training / Learning Outcome

At the end of the training, you should be able

1. to arrive at a logical definition of 'large-sized classes'
2. to identify reasons why the primary schools with large sized classes are still continuing
3. to identify problems of primary schools with Large Sized Classes

Training Content

Activity - 1 : Sharing of Experience in Group Session

During the first session, the trainees will be requested to share their experience about the size of different classes in their respective schools The chairman of the session will take note of important points and sum-up the discussion with a focus on what should be the ideal size of class in primary school emerged out of sharing of experience Discussion should focus on

* What should be an ideal size of a class in a primary school within the tolerance limit of the teacher?
* What is teacher pupil ratio? What are the factors that affect teacher - pupil ratio in a primary school ?

On completion of sharing of experiences the trainees will be requested to read the following text carefully ·

The Text

1 The ideal teacher - pupil ratio is 1 30/35 specially in rural primary schools where there are more first generation learners where the learners do not posess pre-school experiences, for whom the factors like school readiness, organisation of joyful learning/ competency based teaching are vital

2 Teacher pupil ratio depends on number of pupils per class and the number of classes per teacher.

3. The factors that influence teacher - pupil ratio in a typical primary school are

(a) *Size of the Classroom* - size of the most of the classroom are inadequate characterised by lack of space

(b) *Rate of Enrolment* - due to enhancement of social demand for primary educations rate of enrolment in primary schools has gone up in recent years

(c) *Flow of Teachers to the System of Primary Education* - due to various reasons the flow of primary teachers to the system of primary education is slow

(d) Location of the School (rural/ urbal/ remote areas)

Now reflect on the following questions

- Do you agree with the text ? If not modify the text
- Could you identify some more factors that affect teacher - pupil ratio ?

Activity - 2 : Group Activity

Divide youself into convenient groups One of you should act as Group Leader Read the following text carefully

The Text

1 Large-sized classes in primary school are likely to continue in developing countries, for some more time In India, existence of large sized classes is a problem not only at primary level but also at secondary and Sr secondary level located both in rural and urban areas In a H S School teacher pupil ratio is almost 1 100 But they are matured learners In case of primary school the problem should be tackled with more sincerity and dedication

2 The formula for calculating Teacher - Pupil Ratio is

$$\text{Pupil / teacher ratio} = \frac{\text{Enrolment}}{\text{Classes}} \times \frac{\text{Classes}}{\text{Teachers}}$$

For example, 186/4 x 4/4 = 46 5 (ratio 1 · 46 5)

Enrolment = 186, No of class = 4, No of Teachers = 4

3 Teachers in India generally agree that if the number of students in a class is 35 or more, it may be considered as a large class

Reflect on the following questions ·

* Do you agree with para 1 of the text? If not modify the text
* Calculate the teacher / pupil ratio of each class in your school using the formula given in para 2
* You should arrive at a definition of large-sized calss through consensus Do you agree with the definition given in para 3

Activity 3 : Group Activity

This activity involves brainstorming reflective session Divide yourself into convenient groups and in each group read the following text carefully In the text, some of the reasons of why large sized classes exist have been enlisted, review the text, generate some more points, make the text pinpointed, and arrange them in order of importance At the end, group view points will be consolidated.

The Text

In all the states the social demand for primary education has gone up due to various reasons .

1 Succesful literacy campaign has generated consciousness among people about the benefits of primary education

2 Special enrolment drives undertaken in rural areas with community participation

3 Success in panchayat system and land reforms heve played significant roles in bringing stability in economic life of the people which has enhanced social demand for primary education.

4 Parents have been motivated to send their children to primary schools due to supply of free taxt books (particularly for SC/ST and girl children) and mid-day meal facilities

Consequently, the enrolment in primary schools have gone up. Flow of teachers to primary school system is slower than rise in enrolment. Though the existence of large - sized classes is undesirable, it may continue for some more time to come due to following reasons .

Activity 4 : Reflective Brainstorming Group Session

Divide yourself into convenient groups Some of you should volunteer as group leader who will consolidate the group view points. Read the problems of primary schools with large-sized classes very carefully as given in the following text

The Text

Problems of teaching-learning in primary schools with large -sized classes are many These are

- Large sized classes are noisy It is difficult to maintain discipline and to manage the teaching-learning The teacher has to shout either for teaching-learning or for maintaining discipline. Students frequently change their seats.

- It is difficult on the part of the teacher to give proper attention to each individual student and to individualise instruction.

- All students cannot listen teachers explanation/teaching and it is also difficult for the teacher to understand the questions raised or answers given by the students. Students seated in the last bench cannot listen teachers transaction due to too much noise

- It is difficult for the back benches to see the writings on the blackboard clearly It is also difficult for the teacher to ask each individual student to write on the blackboard due to shortage of time

- It is difficult to identify the learning difficulties of the students and it is also difficult to correct the mistake/ remove the difficulties on the basis of on the spot evaluation during the course of instruction

* It is difficult for the teacher to make the lesson activity based and joyful in large sized classes Consequently, the students do not feel motivated in the lessons. Teachers talk for most of the times say 80 % of the time

* As a result of dry and monotonous teaching-learning in large sized classes, the rate of students absenteeism is high specially in the rural areas

* It is difficult for the students to express their creative talent in large sized classes.

* It is difficult to keep account of the absentees in large sized classes and consequently steps are not taken to evolve strategies to reduce the rates of absenteeism.

* Seating arrangement in large sized classes is arbitrary due to lack of space

* In large sized classes, front liners are attentive, back benchers are inattentive.

* It is difficult on the part of the teacher to correct the wrong pronunciation made by the student.

* It is difficult for the teacher to check the assignments and to make corrections.

* A lot of time is wasted in role call everyday.

* It is difficult on the part of the teacher to establish personal rapport with all students. Students are deprived of love and affection of the teachers

- It is difficult to provide learning materials/aids to all students in big classes

- It is difficult to interact with all students on a lesson.

- Teachers follow rapid and mechanical teaching process to complete the syllabus.

- Assessment of the attainment of the individual student is ignored Students activity in the class room remain unattended by the teacher due to pressure of work

- Teacher himself feels dissatisfied with his / her performance in the classroom situation

- Little attempt is made to retain the children who shows tendencies to drop out

- Large sized classes disturb adjoining normal sized classes

- Teacher only concentrates on development of cognitive abilities The psychomotor and the affective domains of pupil's personality remain by and large, under developed'

- Due to heavy work load teacher loses energy and enthusuasm to contact with the guardians and other related persons for discussion on the issues related to improvement of the child and development of the school

- In view of the heavy work load teachers do not take necessary interest in enrolment drive or to persue the parents of dropout children to send their children to school

- Due to pressure of work teacher finds difficulty to organise the programmes for field trips and field study

- Teachers emphasis is mostly on home tasks, but unfortunately the teacher is not able to check the home tasks regularly

- It is difficult to make classroom attactive and colourful. Unattractive classrooms makes the students inattentive and disruptive

On completion of reading reflect on the following issues ·

1 Identify some more problems related to teaching-learning in primary schools with large sized classes

2 Classify the problems into categories i e teacher related, student related, teaching-learning related etc

3. Suggest solution of the problems
On each issue group reports will be prepared and at the end, group reports will be consolidated by the leaders and will be presented before all trainees for review.

Field Interaction for Assessing Training Needs of Teachers of Primary Schools having Large Sized Classes

Training / Learning Outcome

At the end of the training, you should be able.

1 to understand the procedure of assessment of training need of teachers working in primary schools with large - sized classes

2 to conceive how need assessment tools are to be formulated

3. to understand how data of the tool is to be tabulated

4 to understand how implications of data are to be infered

Training Content

Activity 1 : Group Session

Divide yourself into convenient groups. Some of you should volunteer as a leader who will consolidate the group view points Read the following text very carefully .

The Text

Problem Assessment/ Need Assessment through Field - Visits/ Administration of Tools/ Tests followed by Brinstroming Interactive Sessions of Experts/ Resource Persons/ Trainers

In order to make a critical assessment of the problems faced by primary schools with large sized classes and the training need of teachers teaching insuch schools, field visits were undertaken in Orissa and West Bengal Field visits to twenty primary schools with large sized classes located in Puri ad Khurda districts of orissa were undertaken by RIE

faculty during 1996 in connection with DPEP project emntitled 'Formulation of Intervention Strategies for Effective Management of Large Sized classes at Elementary Level' Field visits were also undertaken to eight primary schools with large sized classes in West Bengal in collaboration with West Bengal Board of Primary Education, Calcutta, during September 1997. Field data were collected through Structured Instrument to Observe Classroom Episodes / School Environment, and Interview Schedule for Teachers RIE faculty and resource persons selected by Board of Primary Education, West Bengal had visited the primary schools with large sized classes as participant observers and collected data about size of class room, learning episodes and learning environment from selected primary schools.

Critical examination of problems/ needs/ responses collected through structured observation schedule and interview schedule were tabulated and presented to experts/resource persons/ RIE faculty for critical examination The experts/ resource persons were selected from headmasters of primary schools, national awardee primary teachers, faculty of training colleges, faculty teaching language in general college, supervisory/ inspectorate staff and consultants from Board of Primary Education, West Bengal

Problems/ needs identified in the context of primary schools with large sized classes located in Orissa and West Bengal may have relevance to similar context in other states

On completion of reading, reflect on the following questions

1 Identify the issues which the experts / resource persons should highlight after the raw data is presented to the tranees

2. Identify the possible outcome of such deliberations having bearing on improvement of teaching-learning in large sized classes context

Group reports will be consolidated and presented through concensus

Activity 2 : Reflective Group Work

Divide yourself into convenient groups Group leaders should consolidate the group reports Analyse each item of Exemplar Structured Instrument to Observe Classroom Events/ School Environment and Interview Schedule for Teachers given in the following pages Reflect on following issues

1. How to improve the items of the structured instrument to observe classroom events/school environment by deleting unnecessary items and adding relevant items?

2 How to improve the response category of each item keeping in mind the procedure of data tabulation etc ?

3 How to prepare sheets for tabulation of raw data?

STRUCTURED INSTRUMENT TO OBSERVE CLASSROOM EVENTS/ SCHOOL ENVIRONMENT

(Put ✔ mark on appropriate item / items)

I BASIC INFORMATIONS

1 Name of School

with postal address :

2 Total No of Teachers working

in the school

3 No of teachers present on

the day of visit

4 Time - table (collect a copy of the

time table of the School)

5 Availability of learning materials :

- i Black Board (Nos.)
- ii. O.B Materials
- iii. Text Books
- iv. Teaching Aids (Enclose list)

6 No of students and availability of space class wise

Class	Students												Available Floor/ space in sq feet
	Boys				Girls				Total				
	SC	ST	G	T	SC	ST	G	T	SC	ST	G	T	
I													
II													
III													
IV													
V													

7. Achievement of Students in the sample larged sized class in last Annual Examination. No of students securing below 30%, 30 - 50%, 50 - 70%, above 70%.

8. Frequency of Evaluation.

9 Nature of Evaluation
Unit Test/ oral test/ competency based test/ traditional achievement test

10 Mode of evaluation . Unit Test/ oral test / traditional/ competency based

11 Is there any prescribed school uniform? Yes / No

12 What are the value inculcation strategies in the school ? Morning Assembly/ Teaching of Moral Science· through Organisation of Various Activities

II OBSERVATION OF CLASSROOM EPISODES

1. Name of the class/unit observed :
2 Duratioin of observation - 1 period 40 / 45/50 Minutes
3. Subject taught
3a Topic.

4. Nature of Pedagogy
   - a Only whole class teaching/ whole class teaching followed by group learning / whole class teaching followed by group learning followed by drill/ peer or senior assisted learning
   - b. Podium instruction / activity based instruction
   - c Traditional teaching / competency based teaching

5 Class room climate
   - i. democratic/ autocratic / co-operative
   - ii. emphasis on uniformity/ flexibility in learning

6 No of students having text books and note books.

7. No. of students having only note books or slates:

8 No of students having work books along with text books

9 i. Nature of activities given by the teacher :
   - ii. Nature of instructions given by the teacher to the students to carry out the activity:
   - iii. Is the class room arrangement conducive for the activity ? Yes / No
   - iv Is the space adequate for the activity ? Yes / No
   - v Activity was arranged within the class room / outside the class room
   - vi. Ascertain the approximate percentage of student engaged in the activity
   - vii The activity was supervised by teachers / peer / senior/ none/ monitor

viii Before starting the activity the teacher
had given / had not given examples/
demonstration of skills

ix Was the task / activity adjusted to
individual differences ? Yes / No
If yes, described the strategies

10 What was the motivational level of
the students Low/Average/High

11 How were the students motivated by the teacher ?

12. Was there any effort by the teacher to identify the difficulty of slow learners? Yes / No

If yes, what strategies were followed by the teachers to look after the difficulties of slow learners ?

13 Was there any effort by the teacher to provide enrichment inputs to the talented students Yes / No

If yes, specify the inputs

14 Was there any effort on the part of the teachers to maintain high engatement rates in the class room? Yes / No

If yes, describe the strategies.

15. What was the level of the interaction between

Teacher	- Student	Low/High/Medium
Student	- Student	Low/High/Medium
Single student	- Group	Low/High/Medium

16 The use of teaching aids in the class by the teacher was
effective/ moderately effective/ not effective

17 Was drill/ self learning given by the teacher? Yes / No

If yes, please state the strategies.

18. At the end of the class has the teacher assigned any home work ? Yes / No

If yes, please described the nature of home work given

19. Did the class/ teacher/activity provide equal learning opportunities to all students ? Yes /No

If yes, How ?

20 Was ther language of the teacher appropriate and accessable to learner ? Yes / No

If no please state why ?

21. The level of understanding of the students was evaluated by asking
just the right no. of questions / too many questions/thought provoking questions probing questions

22 The questions were
well distributed / well structured / properly sequenced

23 The answers given by the students were :
appreciated / ignored/ corrected / used for further development of the lesson

24 How many students could answer the questions correctly :

i. almost all

ii. about 50%

iii. less than 50%

iv None

INTERVIEW SCHEDULE FOR TEACHERS

(Put ✓ mark on appropriate item/items)

I *Basic Informations*

1 Name :

2 Age :

3. Teaching Experience

4 Educational Qualifications .

5. Sex .

II. *Informations about Teaching - Learning*

1. Which subjects do you teach ?

2. What classes do you teach ?

3. What are the strong points and weak points of the school?

4 i. Do you possess your own text book and work book? Yes / No

ii. Have you got a quarter on the campus ? Yes / No

iii. If no, are you residing nearby ? Yes / No

iv If no, how do you commute ?

v How much time do you spend in commuting to the school ?

vi. does this loss of time in commuting affect your preparation for the class ?

5. What are the problems faced by you in your teaching learning situation? (list out the problems)

6. Explain the strategies by which you manage large sized classes

7 Do you possess syllabus in the school ?

8 Do you get sufficient time to complete the sylabus ?

9. Do the school possess sufficient teaching aids ? Yes/ No

10. How do you use these teaching aids?

11. Do you get sufficient time for teaching subjects like Physical Education, Art Education and S U P W. ? Yes/ No

12. How do you identify slow learners and good learners ?

13. Is there any Parent-Teacher association ? Yes/ No

14. Do you get any help from parents/ community members of the locality ?
If yes, what are these ?

15 Do you arrange Parent - Teacher meetings ? Yes/ No
What is the frequency of such meetings ?

16. What are the issues discussed in such meetings ?

17. What is the seating arrangement of the class room ?
- i. Rows/ circular
- ii. boys / Girls separately / No such separation
- iii. the seats are fixed / movable
- iv. Does every student has a partner ? Yes / No

18 Evaluation in the class is done by
Teachers
Peers / Seniors
Both by teachers and peers

19 What strategy do you follow for material development ?

Develop yourself / develop with the help of students

20 Have you developed any of the following types of materials ?

i no cost / low cost aids Yes/ No

ii concept centred learning aids Yes/ No

iii Learning materials developed out of materials available in local environment Yes/ No

iv remedial self - learning activity sheets Yes/ No

v differentiated learning materials for children Yes/ No

vi creative activity sheets Yes/ No

vii guidelines for group learning /self learning/ drill Yes/ No

viii competency based test items Yes/ No

21. How to do you manage self - learning/ drill ?
(State Strategies)

22. Do you measure school readiness in class I

If yes, how do you measure it ?

23 Do you get any help from local community in solving the problems of teaching - learning associated with large sized classes?

24. How do you manage the problem of space in your school ?

25 What type of group management strategy do you follow in your class ?

i mixed ability grouping

ii mixed socio - cultural grouping

iii grouping of grades with lesser age difference

iv grouping of grades with lesser subject load

- Teacher posting has not been made due to administrative difficulties

- Teacher posting has been made, but the teacher has not jointed the duties

- Post is vacant due to transfer and substitute is not willing to join

- Post could not be created in new schools immediately, since it involves additional allocation/ funds administrative approval.

- Infrastructural facilities/ availability of rooms/ space in the school is limited, but the rates of enrolment/ attendance are high in a locality.

v grouping of grades which require direct supervision by the teacher and grouping of grades where teaching - learning could be conducted through group learning/ peer assisted learning or self-learning

26 Do you follow

  i fixed group and fixed group leader

  ii rotation of groups and group leader

27 What type of grouping you encourage during self-learning ?

28. What type of joyful learning activities you organise through group work inside the classroom in the subject area you handle ?

29 What type of joyful learning activities through group work you organise outside the classroom ?

30 Do you think organisation of joyful activity based learning takes more time ? Yes / No

31 What type of feedback/ remedial instruction you provide to slow learners/ learners with difficulties/ diabilities ?

32 What type of learning strategies you follow to individualise the instruction in large sized classroom ?

33. Do you think your training is adequate to solve classroom problem ?
If no, what are the areas where you would require further training ? (list out the areas)

34 How it is possible to organise activities relevant to pupils area of interest/ child's uniqueness in a large sized class ?

35 How difficulties of organisation of activity based learning could be minimised in large sized classroom ?

36 How it is possible to extend learning opportunities/ choices to students in a large sized classroom ?

37. How it is possible to provide remedial instruction to slow learners and enrichment inputs to talented children in large sized classes simultaneously ?

38 How it is possible to provide non-directive and flexible mode of learning in large sized classes ?

39 How it is possible to use wide range of tools/ equipments to support every child's access to learning in large sized classes ?

40. How would you ensure equity of choices/ oppertunities to use materials in large size classes ?

41 What interventions are required to enhance instructional time?

42 What strategies are to be followed for individual and group practice of concept attainment and skill/ competency development?

The resource faculty are to help the trainees to get suitable answers related to procedure of data tabulation, data compilation and presentation in tabular form

Activity 3 : Brainstorming Group Sessions

1. On the basis of analysis of data identify the areas where the teachers teaching in large sized classes would require training

2 Classify and prioritise the need areas

INTERVENTIONS / STRATEGIES FOR SOLUTION OF THE PROBLEMS OF PRIMARY SCHOOLS WITH LARGE SIZED CLASSES

Training/Learning Outcome

At the end of the training, you should be able to ·

- identify interventions/ strategies for solution of the problems of primary schools with large sized classes

Activity 1 : Brainstorming Group Session

Divide yourself into convenient groups. Group leaders will consolidate group report / final report. Each group will examine two/three strategies given in the following text

The Text

In order to solve the problems of primary schools with large sized classes, teacher has to take help of following interventions/ strategies. The inverventions may differ from subject to subject and even in the context of different topics in same subject

1. To obtain the Monitorial Assistance :

Monitor may help the tracher ·

- to demonstrate the materials
- to lead/ supervise the sutdents in outdoor activities/ field study
- to supervise self-learning / drill

- to supervise/ coordinate group learning/ peer assisted learning
- to maintain discipline in the class room/ among students of all groups
- to help the teacher in roll call
- to assist the teacher in placement of learning teaching aids
- to assist the teacher in making seat arrangement for groups and individual activity
- to assist the teacher in collections of home work
- to assist the teacher to make the classroom attractive and colourful

2. Group Learning/ Cooperative Learning/ Child to Child Learning/ Peer assisted Learning

Learning is a deep personal process enriched through group interactions. Each child has an unique learning frame of reference and the uniqueness is strengthened through group interaction. Individual may learn performing techniques from other members of the group through feedback An individual learns better and quickly in group situation. Problem solving also require group cooperation. Joyful learning through group activity can modify the following classroom behaviour of the children which are not associated with learning.

- disruptive behaviour through continuous talking
- aggressive posture
- sitting idle
- temper tantrums
- psychological withdrawal
- engaged in work not related to learning

There are different cooperative learning models. Selection of model depends on the subject content, nature of abilities / skills to be developed, number of students in the whole class and teacher competency The teachers may also develop his own model of cooperative leaning. Some exemplar models are ·

- Student Team Achievement Groups
- Team Game/ Tournament
- Group Assisted individualisation
- Jigsaw
- Learning Together (on a theme / content)
- Group Investigation/ Enquiry
- Group Projects
- Practice of Skills/ Abilities in group situation
- Academic games

Principles of Group / Cooperative Learning

The basic principles of co operative learning are :

- The nature of cooperative learning model selected/ formulated by the teacher and the reason of selection / formulation
- Group Formation Modalities
  - mixed ability grouping/ mixed socio-cultural grouping etc
- Management Strategies – whether .
  - the learning objectives have been formulated ?
  - materials / supplied / arranged ?
  - time limit fixed ?
  - directions given by the teacher ?

- * Defining learning outcome in terms of concept attainment and ability/ competency development

- * Teachers role in group work
  - how teacher can facilitate the process of group learning ?
  - group size composition
  - seating arrangement
  - material management
  - teacher intervenes when serious problem comes up
  - observation of transition from one step to next step in an activity
  - monitoring of group progress
  - learning time management

Inputs in Group Learning

- * both student and teacher/ group leader offer inputs in group learning
- * group leader defines learning outcome in terms of concept attainment and ability/ skill/ competency development
- * student discovery of what the topic/ content is about
- * group leader focussing on why the topics is interesting
- * teacher evaluates what the students already know about the topics/ content
- * teacher uses motivational strategies to ensure students involvement in group work
- * flexible time table according to needs of the group
- * teacher intergrate cognitive development with affective development through group work

- group leader provides support materials
- group encourage individual child to use similar strategies
- instructional examples are provided by the teacher/ text book/ group leader / instructional media / even by students
- teacher/students use of language familiar to all members of the group
- teacher/ group leader explains the skill acquisition/ ability development/ concept attainment strategies
- student offer explanation/ teacher offer explanation/ clarification
- teacher/group leaders demonstration is followed by student demonstration - observation
- teacher / group leader/ students gives feedback
- students check one another for understanding of concepts skills/ ability components
- each group may be entrusted with specific tasks

How to form groups ?

- Mixed ability grouping can be formulated for organisation of joyful learning activities Group leader will conduct the activities, give the feedback to weaker students and monitor the progress. Teacher should provide guidelines to the group leader
- Mixed socio - cultural grouping : The students belonging to different socio - cultural/ economic/ ethnic background could be grouped together for conduct of activities related to non-cognitive areas such as social

sensitivity, social competencies, values, environment building activities, drama, folk dance, activities related to core curriculum areas and other areas related to affective domain

- Grouping of children who require direct supervision by the teacher and grouping of children who could formulate activities through group learning or peer assisted learning or self - learning

  The children who are first generation learners and who do not have pre-school experience belonging to households where parents are illiterate, children who have language difficulties, children who have different types of learning disabilities and suffer from cognitive malfunctioning caused by malnutrition, iron-vitamin-iodine defeciencies and worm related diseases would require more teachers assistance and direct supervision by the teacher There is a need of remedial instruction for such students supported by medical inspection and treatment

- *Rotation of groups and group leader:* Group leader and composition of groups will rotate task/ content/ competency wise.

- *Grouping during self learning :* During self-learning two students- one above average and one average/ or with learning difficulty should sit together for performing self-learning activities through discussion

Group leaders are to be oriented in conducting group activities Group management will vary from school to school depending on the nature of learners/ class room characteristics, availability of space and the nature of subject content

On completion of group activity the teacher and students would evaluate the progress of the group learning outcome

Through co-operative learning students learn co-operation as a structure, co-operation as behaviour, co-operation as helpfulness and co-operation as mutuality.

3. Sitting Arrangement

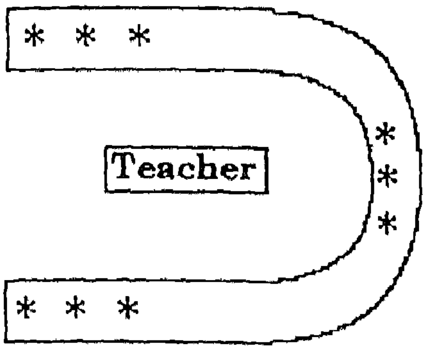
Since accommodation is a major problem in many primary schools with large sized classes, the seating arrangement may be thought of in different ways than the usual. Rethinking of accommodation may be done in terms of optimal utilisation of the available space and the comfort of the students and the teacher Students of primary classes usually sit on floors . sometimes these are mixed with benches and various other arrangements. The teacher usually occupies a frontal position Attention to all students would become more feasible if the arrangement is that of a circle or a horse shoe pattern or square etc as shown in the next page. Teacher should occupy a central position.

Such an arrangement would make the teacher accessible to all the students and he / she could be clearly heard by the students.

Therefore, the possibility of forming groups of different shapes may be thought of. Large number of groups may become at times unmanageable. Students siting in various corners may form a group eg., those in the self corner, Group 1, those in the right corner Group 2 and so on

A group leader from amongst each group may be chosen by the students Answers and suggestions by the group may be given by the group leader on behalf of his/her group

I



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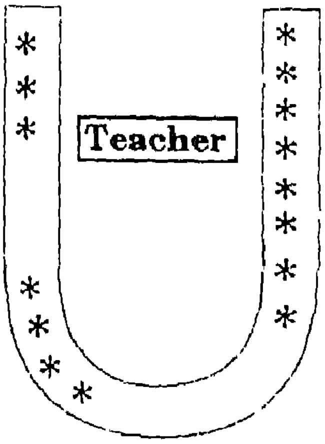

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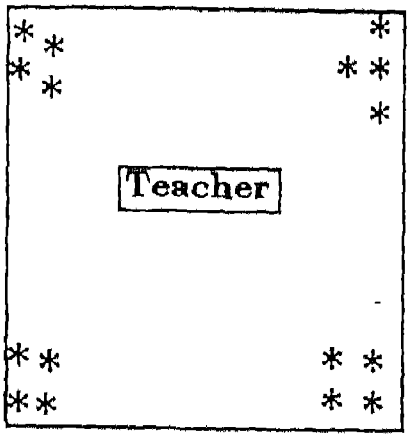

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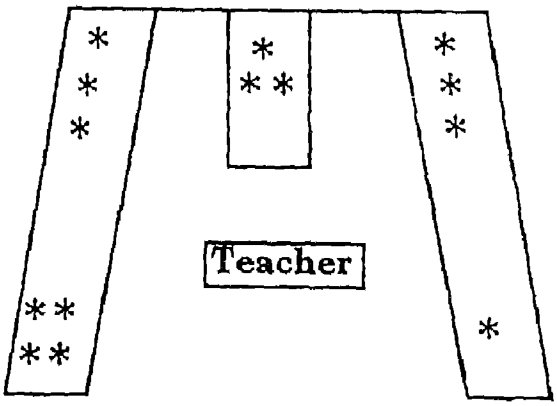

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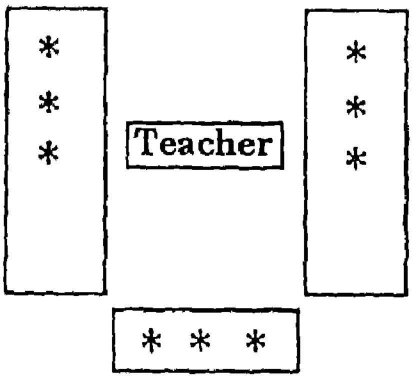

Teachers may ask for suggestions from the students and their group leaders as to what would they like to study, more important the manner in which they would like to study On the basis of their suggestions teachers may develop the lessons with the students' help whose involvement in the class will then be complete and whole hearted since they will have a sense of ownership and belongingness in the teaching - learning process

Buddy System

A variation on this theme is the introduction of 'buddy system' within the groups. All of us have friends, some closer than others. In order to exploit this human emotion, every student may be paired with his / her best friend They thus form a buddy pair, and each may be made responsible for each other's learning. Responses will not be individual, but a single response will stand for the buddy pair

4. Widening the Scope of Black Board in Class Room

In addition to the blackboard meant for the teacher, the walls of the three sides of the room of classes I and II from the base to about 3 feet above may also be blackened so that students in their free time can put it to whatever use they want to. This may help them in writing activities as well. They can draw and doodle on it during their free time. These activities will promote the spirit of competitiveness among the students. For the classes III to V, three black boards may be used to facilitate group work.

While group work has already been in use by some teachers in large classes, it has to be tried out on a larger scale. Unfortunately,

having assessed the usefulness of group work activities these are unceremoniously dropped in the higher classes In the primary classes along with group work the teacher may benefit from peer teaching and peer help in the large classes. Students learn as much from the teacher as much from their friends in the group. Large classes therefore are not a constraint, in fact in this regard they may be treated as a resource

5. Meaningful Integration of Themes/ Contents/ Competencies related to Various Subject Areas in the Same Class

The contents of identified areas in different subjects could be rationalised and integrated conveniently to reduce the content load and could enhance learning time. The quantum of subject contents could be reduced by meaningful integration of concepts/ contents/ competencies derived from different subjects For example, content/ competencies related to language and Art Education. Language, Art Education and EVS, Mathemaics, Physical Education and Music etc. could be meaningfully integrated Of late it has been realised that an integrated approach to teaching-learning may help in reducing the load of school bag In such integration :

- specific objectives are to be stated in terms of concept attainment and competency/ skill/ ability development relevant to the grade
- non-cognitive areas/ themes needs to be blended with content areas of language, mathematics and EVS for total curriculum transaction
- by applying liberal dose of art education, physical education SUPW and value education on integrated content, the activities could take the shape of playway and joyful
- management strategies like grouping time table, space management should be need based

6. Organisation of Activities through Rotated Multiple Learning Mode

Organisation of activities through rotated learning mode may take different form

Exemplar I

Group I	Group II	Group III
Direct Teaching by Teacher	Leader/ Monitor Assisted Group Leanrning/ Cooperative Learning	Self - learning

Exempler II

Group I	Group II	Group III	Group IV
Direct Teaching by Teacher	Monitor Assisted leanrning	Group Leader Assisted Learning	Self - learning Activities

In such situations one group will work with the teacher, while other groups are engaged in group learning, doing exercises, field visits, revising previous assignment and self learning during first period. During other periods the arrangements will rotate.

Exempler III

Periods	Group I	Group II	Group III	Group IV
1st	Direct Teaching by Teacher	Monitor Assisted Leanrning	Group Leader Assisted Learning	Self - learning
2nd	Group Leader Assisted Learning	Self learning	Direct Teaching by Teacher	Group Leader Assisted Learning
3rd	Self-learning	Direct Teaching by Teacher	Group Leader Assisted Leaning	Group Assisted Learning
4th	Group Leader Assisted Learning	Group Leader Assisted Learning	Self - learning	Direct Teaching by Teacher

Within 45 minutes duration activities also could be organised following rotated multiple learning modes

Exempler IV

Division of Learning Times	Group I	Group II	Group III
First 15 minutes	Self Learning	Teacher Guided Activities	Group Learning
Second 15 minutes	Teacher Guided Activities	Group Learning	Self Learning
Last 10 minutes	Group Learning	Self Learning	Teacher Guided Activities

You should note that ·

- remedial instruction/ enrichment lessons are to be inbuilt in group learning and self - learning activities
- value education should be linked to all activities
- adoption of play way/ activity based joyful learning approach
- out of the class room activities should be organised in group situations

7. Strategies to obtain Community Support

There is a need to identify the strategies to enhance community support to improve the functioning of primary schools with large sized classes in the following areas :

- material development
- resource help to improve the school facilities/ environment
- organisation of activities in different subject areas

The monitor/ group leader may take the students to skilled workers in actual work setting in villages who could explain/ demonstrate the skill acquisition process which could be followed by group drills/ individual drill

of the skill The vast potential of community support in teaching learning of SUPW, physical and health education, art education, value education, EVS and material production should be explored.

Parent - Teacher Association should be strengthened. Parents involvement should be defined in terms of :

- defining appropriate pupil behaviour
- enhancement of self esteem of pupils
- sustaining joyful learning activity in home which has been initiated in school
- facilitating the development of specific abilitie as a substitute teacher

8. Material Development Strategy

Material Development Strategy should highlight

* development of remedial self-learning activity sheets to promote multi-level teaching
* development of differentiated learning materials for children
* development of concept centred learning aids/ materials developed from no-cost/ low cost/ materials available from local environment to enhance the demonstrative ability/ performance competency of the teacher
* development of creative activity sheets/ creative writing for students
* development of guidelines for group learning/ self- learning/ drill

Learning materials should assist different levels of difficulty and permit pupils to work/ learn independently. Students and teachers should be involved in procurement/ production of learning aids of different types.

9. Monitoring and Supervision Strategies

The success of intervention / and remedial strategies would depend on effective supervision and monitoring There is a need for supervision and monitoring in the following areas ·

- Training of teachers of primary schools with large sized classes-implementation of different pedagogic and management strategies
- resource mobilisation
- partnership between teacher, parent and community

10. Collective Teaching

Certain activities like cleanliness, play way activities, inculcation of value education through morning assembly, story telling, recitation, dramatisation, competition in sports and athletics can be organised collectively

11. Activity based Joyful Learning

In order to involve all students in teaching - learning in large sized classes, activity based joyful learning through group work should be introduced. Activity based learning will minimise unnecessary noise and disruptions. Each activity should be demonstrated by teacher/ group leader Activity based joyful learning has the potentiality of reducing drop outs.

12. Field visits/ Trips

Through group field visits/ trips the learner may be exposed to various aspects of environment. The students may be asked to observe, take notes, exchange view points and draw generalisation. The knowledge gained through field visits may be systematised in the classroom

Self - Learning

Self - learning is an important mode of learning. Since learning times and learning styles differ from child to child, it is the learner who has to undertake responsibility of his/her own learning. Self-learning has a number of advantages. These are :

1 Self - learning saves teacher time since in primary schools with large sized classes the teacher is already under stress

2 Nothing is imposed on the child. He/She learns at his her own space.

3. It is a potential strategy to keep pupils engaged

Reflect on following issues through group discussion. Leader will consolidate the group view points :

- * Identify some more advantages of self - learning
- * Through self - learning following activities could be encouraged in large sized classes
  - silent reading
  - solving mathematics problems
  - drawing / painting
  - SUPW /Work Experience related activities
  - preparing learning Aids
  - drill

Remedial Instruction should be in built in self-learning activity. Remedial self-learning activities could be promoted through activity sheets. Remedial Activity Sheets should be based on hard spots in learning. These activity sheets could be incorporated in the work book. Apart from activity sheets different pupils may be given different types of activities While some pupils may match the colours, others may prepare different

geometrial sizes and shopes, some may build a stoty through arranging pictures properly on a flannel board, some may be engaged in drill on hand writing, etc.

Reflect on the following issues

- * Should we have workbooks on different subjects separately or a single work book should incorporate remedial activity sheets on all subjects ?

- * Identify activities which could be undertaken through self-learning in
  - Language (1st)
  - Mathematics
  - EVS I and II
  - Art education
  - SUPW
  - Value education

- * Prepare a blueprint of group field visits showing various activities to be undertaken.

CENTRAL ISSUES OF TEACHING - LEARNING AND OPERATIONALISATION OF INTERVENTIONS/ STRATEGIES OF MANAGING LARGE SIZED CLASSES

Training / Learning Objectives

At the end of the training, you will be able :

1 To understand the central issues and changes visualised in teaching - learning at primary level

2. to conceptualise the methods of operationalisation of interventions/ strategies of managing large sized classes

Training Content

Activity 1 : Group Work

Divide yourself into convenient groups. Any one of you may act as a group leader, who will consolidate the group report. Read the following text carefully.

The Text

Central Issues of Teaching - Learning

The problems of primary schools with large sized classes should not be perceived as management problems alone ignoring the learner characteristics, classroom characteristics, and teacher characteristics which influence teaching-learning to a considerable extent. These are

* each child is unique

* each child has specific needs

* each child has his / her own learning style and construct his / her own knowledge

- each child takes own learning time and consequently learns at his her own pace
- whole syllabus is to be covered
- each child has ability to improve
- each child has potentialities
- each child is curious to learn
- poverty, cultural deprivation and malnutritions affects childs ability to learn
- concept attainment, ability/ skill/ competency development and formulation of application strategies are the major goals of learning
- attention span of children are limited
- imposition of teachers view /adult view restricts child's learning
- motivational level of children differs
- motivational level of teachers differ
- teacher play important role in teaching - learning process
- large number of children has learning difficulties
- socio-cultural resistance to pedagogy is to be considered
- learning/school environment affects learning process

After the reading is over, reflect on following issues. Consolidate view - points of the group members :

- In view of the above learner's, teacher's and classroom characteristics what type of changes do you visualise in teaching-learning within the limitations of a primary school with large sized classes ?

Leaders of the group will consolidate the group viewpoints and present before the whole group

Activity 2 : Reflective Group Session

The same grouping of trainee's will continue Read the following text carefully in each group .

The Text

In order to revitalise teaching- learning in a primary school with large - sized classes the following changes are urgently needed depending on the nature of content and availability of facilities ·

* from podium instruction to activity - based learning
* from dry pedagogy to joyful learning
* emphasis on concept attainment, ability/skill/competency development
* memorisation is limited to learning of poems, spelling of words, mathemetical formulas etc
* from concept learning to application
* from conventional problem solving in school to problem solving in life
* from transmission of information to interpretation and interactive communication / questioning of evidences
* from whole class teaching to multiple learning modes
* from focus on content of learning to process of learning
* from homogeneous pedagogy to differentiated pedagogy
* from teacher as information dispersion to teacher as facilitator
* from didactic learning to experiential learning

Leaders of the group will consolidate the group viewpoints and present before the whole group.

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* from whole class teaching to multiple learning modes
* from focus on content of learning to process of learning
* from homogeneous pedagogy to differentiated pedagogy
* from teacher as information dispersion to teacher as facilitator
* from didactic learning to experiential learning

Reflect on the following issue :

- Identify the 'change' related issues which you will be able to incorporate in teaching - learning within the limitations of primary schools with large sized classless ?

Activity 3

The same grouping will continue. Read the following text carefully.

The Text

If all topics related to all subject are to be taught by teacher it will be difficult to complete the syllabus. It will be possible on the part of the teacher to complete the syllabus if the following modalities are followed.

1 whole class teaching-learning or group learning for certain specified activities like health and physical education activities, SUPW activities, art education activities, value education through morning assembly and some specified content area through dramatisation/role playing etc

2 convenient combination of the contents of different subjects in same class

3. small group learning/cooperative learning/child to child learning with the assistance of monitor/ group leader

4 remedial self learning

5 seeking monitorial assistance

6 seating arrangement is to be changed as per requirements of class room

7. time table of the school may be changed suitably. Duration of period for teaching mother tongue and arithmatic should be extended upto one hour for effective handling of large sized classes EVS may be integrated to Mother Tongue and Arithmatic Time table should be flexible

8 Reorganisation in location of the black boards

On completion of reading reflect on the following issues ·

- Make a scrutiny of syllabus, identify the content areas where whole class teaching is possible
- Identify the content areas from different subjects where group learning/cooperative learning/ child to child learning is possible
- What should be the content of self - learning?
- prepare an ideal time-table for managing large-sized classes

  Group reports are to be consolidated and presented before the trainees

STRATEGIES OF LEARNING IN DIFFERENT SUBJECT AREAS THROUGH GROUP ACTIVITIES / COOPERATIVE LEARNING

Training/Learning Objectives

At the end of training/learning, you should be able :

1 to understand the minimum conditions for group learning

2 to understand strategies of learning through group work in different subject/ competency areas to conceptualise the material requirement and the procedure of preparing the materials

3. to conceptualise the seating arrangement in limited space of the class room

Training Concept

Activity 1 Group Session

Divide yourself into convenient group. Group leaders are to consolidate the outcome of group work. Read the following text carefully .

The Text

Minimum Conditions for Group Learning

* Bright, average and week students may be included in a group

* Fixed grouping should be avoided. Students should move from one group to another group on completion of a particular task

* There should not be any fixed group leader permanently. Group leaders will also be changed to be nominated by learneers

* Every child should get opportunity to lead others in one activity or the other.

- Size of the group should vary between 15 - 20 learners
- Students should be allowed to make their own choice in joining groups
- There is a need of monitoring the group work either by teacher or by group leader.
- All students should participate in group activity
- Democratic participatory approach should be followed in group work
- Teacher should provide guidelines to group leaders concerning how group work is to be conducted.
- From Class III to Class V, there is a need to fix three black boards on three sides of the wall. One black board should be fixed on the back side of the teacher and on left and right sides of the teacher two more black boards are to be fixed. The black boards may be fixed in such a way that they are accessible to small children. Three group can use three black boards Writing on the black boards should be visible to all members of the group
- Seating arrangement in the class room/ groups are to be done according to needs of the lesson/activities
- Teacher should be easily accessible to all groups
- Teacher/ group leader will give demonstration on how to perform/ performing skills/ abilities. Under the supervision of group leader, each child has to give demonstration that he/she has learnt
- In Teaching-Learning activities involvement of all students should be ensured

- Teaching - Learning should be joyful

- Learning materials are to be prepared by teacher/pupils, teacher and pupils jointly and by local craftman

- Group learning should be remedial in nature and competency based Effective use of pocket boards should be ensured

- Students should be encouraged to keep diaries for record in his experience on different activities

At the end of reading, you may add any new point or may delete and unnecessary points

Activity 2 : Group Session

The same grouping will continue. Read the following text carefully

The Text

Following are the interventions to enhance 'Listening Comprehension' Interventions are exemplar only

1 Telling interesting short stories by the teacher/leader with appropriate modulation of voice, correct articulation, correct pronunciation, repeated articulation, pronunciation of sounds/ words - focus of telling short stories are :

  - brief questions in between
  - should arouse interest and curiosity in the learner
  - suited to the age level, maturity level and interest level of the learner
  - use of local dialect / regional language in classes I & II to be modified and developed towards ideal shape

- use of sounds of birds/ animals, produced originally/ mechanically by tape recorder
- use of target language in classes III to V

2. use of tape for focus on correct articulation/ pronunciation/ repeated listening

3 teacher/ group leader's recitation followed by chorus recitation of rhymes/ songs / poems with appropriate stress, intonation, rhythem and action (without hampering other classes)
   - simple questions in between

4. Conversation on any topics between the teacher and students, between the students with focus on :
   - use of short and simple sentences / questions
   - correction of incorrect pronunciation
   - conversation should be organised on stories/poems facts of daily life
   - repetition of questions
   - proper sequence of questioning
   - use of probing question if some students fails to give answer
   - reframing of difficult questions
   - encouraging students to ask questions
   - encouraging children to think and explore

Reflect on following Issues

* In order to enhance 'Listening Comprehension' in students in class you teach, prepare group learning strategies based on the content of language text.

Activity 3 : Group Session

Same grouping will continue. Group leaders are to report group activities Read the following text very carefully .

The Text

The following strategies could be adopted to develop skill of 'Reading' while teaching language in primary classes. The strategies are exemplars only

1 Model Aloud reading by the Teacher / Group Leader

teacher/ group leader gives a model reading of the language lesson (story/poem etc) and the students follow his reading with appropriate tone, voice, proper stress and pauses.

- teacher will correct student mistake after the aloud reading is over
- unknown vocabulary is to be explained
- appropriate speed of reading is to be ensured
- asking probing questions to ensure proper comprehension by students
- the volume of voice should depend on the number of listeners
- encouraging modulation of voice in appropriate place
- pause, gesture, action should suit the need of the text
- teacher should clarify difficult meaning, spelling and pronunciations
- the principal characters of the story/ poem are to be identified
- the students may be asked to correlate the facts with pictures
- students may be asked to play roles in group situation

- the students may be asked to produce original sounds of birds/ animals
- the students may be asked to draw pictures wherever necessary

* Letter Card Games to arrange letter cards (Both capital and small) in alphabetical order quickly
  - To arrange small letter for each capital words side by side and vice versa (small letters and capital letters may be kept in two boxes)
  - to identify spoken letters for arranged letter
  - to identify missing letters for arranged alphabets

* To Read Letters, Words, Sentences from Blackboard/ Charts/ Flash cards with correct pronunciation

* Emphasis will be given on Practice in Reading different Materials such as' reading small passages, poems, conversation, description, short essays etc
  - practice in reading hand written materials

* Use of Flash Cards to Read Words/ Sentences to Arrang Words in Seriation to form Sentences

* Matching the Picture with the Sequence of the Story Description

* Practising in Group Reading Fast, Reading Aloud, Reading Silently, Self Reading

* Under Group Situation Enacting of Drama. Learners could practice dialogues effectively with modulation of voice and facial expression

- Drilling Exercise on Writing Correct Spelling such as to see and write, writing words on the flash card, writing sentences on a flash card etc
- Arranging Words in Seriation t to make Meaningful Sentences
- Writing Composition through Pictures
  - completion of stories by filling suitable words from the brackets
  - constructing a story using clues
- Identification of Words having Similar Word Ending
  say, lay may carry, hungry, all small, mosquito, tomato - use of flash cards

Reflect on the following issues :

In order to enhance 'Reading Comprehension' in students in class you teach, prepare group learning strategies based on the content of language text.

Activity 3 : Group Session

Same grouping will continue Group leaders are to report group activities. Read the following text carefully .

The Text

The following strategies could be adopted to develop skill of 'speaking' while teaching language in primary classes The strategies are exemplars only.

1 Conversation - Teacher will give interesting topics to each group and ask them to discuss and take note. Group Leaders will monitor the progress. Picture could be used to develop stories for conversations

Conversations could be developed through display of visual arts for example, a number of pictures of festivals

2. Matching Words with Pictures

3 Picture based Conversation-Teacher will show the picture and ask questions

4 Student's Narration - The students may be asked to narrate simple stories, meaning of poems or personal experience

5. Speech and Questioning by Students-A few student may be asked to speak on a topics for a few minutes Rest of students may be encouraged to ask questions

6. Role Play - Teachers may formulate appropriate dialogue on interesting topics Students may be asked to play roles

7 Oral Drill on Pronunciation - Teachers / group leader will pronounce some words/sentences. The students will be asked to pronounce those words /sentences

8 Use of Dialogues through Role Playing in small groups

9. Recitation of One Stanza of a Poem in Group with proper modulation of voice, gesture and action as shown by the teacher/ group leader

   - role play of characters depicted in the poem, for example, to hop and fly like a bird, to crawl and run like a baby animal etc The students may be asked to produce the sound of voices of animals and birds
   - the children could be asked to draw pictures of birds / animals
   - explaining the meaning of the rhymes / poems/ songs though proper action and gestures by group leader

10. Tagging game hat - mat - bat - cat
book - look - -

11 Each child may speak a few words/sentences by looking at picture glossary

Reflect on the following issue ·

In order to enhance 'Speaking Comprehension' in students in class you teach, prepare group learning strategies based on the content of language text

Activity 4 : Group Work

Same grouping will continue. Group leaders are to report group activities Read the following text very carefully .

The Text

The following strategies could be adopted, to develop 'Skill of Writing' while teaching language in primary classes The strategies are exemplars only.

1. Initial Training in Mastery of Strokes and Combination in Class I
   - all alphabets / letters/ figures are combination of different types of strokes like horizontal lines, vertical line, semi circle, slanting lines, circle and so on. In class I teacher should explain how letter figures are composed of different type of strokes to be followed by students practice
   - students demonstration on the blackboard
   - students copying from the blackboard
   - identify students difficulties

2. Drill of Alphabets for Students of Class I

- The similar alphabets could be presented in groups. For example - first category consists of : a,o,e,c,d,p,q,g
  Second category of letters consist of · m,n,h,r,j,l,t,y,u,k,s
  Third category of letter is : W,V,X,Z,S

In the beginning, the students may practice alphabets with similar strokes in order to avoid confusion between b,d, -
j,g,y
p,q

- Exchange of flash cards containing 2 words / 3 word letters
  Flash cards containing two words / three words may be distributed to students of a group. By exchanging the cards the students read and write the words.

3. Dictation Writing

i spacing and punctuation should be emphasized

ii dictation may be corrected either by teacher or group leader

iii mutual correction by students may be done (if pair is composed one good student and one having learning difficulty)

4. Writing Drill on Difficult Words/ Spelling

- writing drill should be undertaken on words and phrases where students commit frequent mistakes

5. Letter Writing

- students should be encouraged to write letters to parents, friends, which can be checked by teachers

6. Mark of Punctuation

- Mark of punctuation could be taught through flash cards and writing signs on the black board.

The group leader shows the punctuation signs on the flash card and ask students to recognise the marks of punctuation. The students could be asked to put the correct marks of punctuations in the sentences

7 Picture Composition and Monitor Guided Composition

- Child could be shown scenes of festivals as Diwali, Independence Day, etc. They may be asked to see the picture minutely and speak what is happening First, the pupils may find difficulty it telling the names of items. With little prompting by monitors, they could speak simple sentences. Thereafter the students may write small sentences with list of words provided related to scene of festivals

8. Spelling Games

- spelling games could be practised in group situation. Words written in a jumble way may be rearranged by the pupils

9. Writing in Sequence seeing Pictures and Vice Versa

- The monitor can show some picture with sentences in a jumbled way. Children may be asked to write the sentences according to sequence of pictures Alternatively, pictures may be arranged in jumbled way and children may be asked to arrange the pictures according to sequence of sentences.

10 Use of Letter Cards for Teaching Compound Words

- Compound words in regional languages are formed by adding alphabets. Each student may practice formulation of compound words by adding one word with another word with the help of letter cards. Group leader may write on the black board. Similar words may be practised by students

11. Use of Charts in Practising the Skill of Writing

- letters to be combined within the lines

12 Use of Pocket Boards in practicing letters, words compund words etc

- letters which will come down
- letters which will go up
- stressing on vowel symbols
- uniform size of letters of a word and leaving no space in between

13 Stroke, Spacing and Sequence are to be checked

- to write alphabets on slate / note book
- to copy alphabets from the black board
- to make words using letter cards in groups and to write them on note book
- to fill in the blanks with correct words and to make meaningful sentences
- coping simple sentences from black boards
- reward the group which could write maximum number of words

Reflect on the following issue

- In other to enhance the Skill of Writing in students in class you teach, prepare group learning strategies based on content of language text.

Activity 5 : Group Work

Same group work will continue. Group leaders are to report group activities. Read the following text very carefully

The Text

The following strategies could be adopted to develop competencies in Mathematics through cooperative/ group learning. The Strategies are exemplar only.

- the collect picture / beads / stones/ small sticks and count them
- to count the number of cards in packets, small sticks in bundles, flowers in bunch, number of benches/ chairs/ tables/ students in the class room by the student in order to give idea of group meaning
- to draw pictures of objects representing the spoken number
- to count and tell the number of pictures / figures in the chart
- to recognise and read number names/ (numeral)
- to read the numerals from black board flash cards and charts
- to count the number of materials (stones, stick, beads) and match with it the correct numeral by keeping the number card on it
- to choose the correct flash card for the spoken number
- reciting number rhymes with action
- to count and tell the number of trees around play ground/schools (outside the class room in groups)

- to prepare the cards from 1 to 9

  1,2,3,.. 9
- to sit in small groups and play number card games. Each throw one card and making two digit, three digit, four digit numbers with specified numerals
- to arrange number cards in ascending and descending orders
- to keep number cards/sticks in bundles in between two given numbers
- use of rhymes for addison, subtraction and multiplication in group situation
- use of tape/scale for measuring length/ breadth and height of materials like paper box, book, note book, pencil, and high/ chest/ wrist of classmates
- use of cards/ pictures to indicate the place value

Group Activities in Other Curricular Areas

1 Play and games, activities related to health, cleanliness, cultural programmes, could be organised in group situation and values could be inculcated through these activities. Students may be assigned responsibilities of organising games, cleanliness of school surroundings, discipline of class room, organisation of cultural programmes, morning assembly and other group work

2. Group work on collection of specimens of 'living' and 'non-living' elements from the school surroundings under the guidance of group leader could be organised. On the basis of collection, of materials preparation of charts of living and non-living elements, drawing pictures etc could also be undertaken

3. Group work on drawing pictures by straight lines, by circle, mixing semicircle/ circle/ strait line and triangle together may be undertaken

4 Identification of common themes for collective teaching in the subject areas like language, mathematics and EVS

5 Activities for collective teaching on following topics may be undertaken

   a My India

   b Science in Everyday Life

   c National Festivals

   d Symbol of Freedom and Unity

   e Utilisation of Leissure time

   f Personal and Community health

Reflect on the following issue

Identify strategies through group learning in EVS

REMEDIAL SELF-LEARNING OF SOLUTION PROCESSES RELATED TO MATHEMATICAL PROBLEM SOLVING THROUGH ACTIVITY SHEETS

[This module will be used for teacher training programme only. The teachers are to practice the development of similar activity sheets during training sessions as shown under Activity 5. While teaching in day to day class, teacher may follow the methodology of teaching mathematics as highlighted in the module]

Training / Learning Outcome

At the end of the training you should be able :

1. to understand the theoretical background of formulating remedial instructions on mathematical problem solving
2. to acquire the skill in preparing activity sheets for remedial self-learning of solution processes related to mathematical problem solving for primary school children

Training Content

Activity 1 : Individual Activity

Read the text very carefully and ask clarification from resource persons on specific issues

The Text

On the basis of diagnosis of learning difficulties of class III children in solving problems on multiplication and division obtained through quantitative as well as qualitative data related to solution processes, a set

of 30 self-learning activity sheets have been developed for use of class room teachers in improving the performance of non-masters or of the children who have learning difficulties in solving arithmetic problems. The development of remedial self-learning activity sheets was guided by two major considersations, i.e. what should be taught and learned, and how it should be taught and learned The development of remedial self - learning materials was influenced by the following theoretical considerations The analysis of problem - solving has led to the identification of the aptitudes involved in competent learning of problem solving. Aptitude refers to any characteristics of a child that can influence his/ her learning for mastery level achievement So far as teaching-learning of mathematics is concerned, there is now-a-days a broad consensus that the major categories of aptitudes underlying skilled problem solving are : domain specific knowledge, heuristic methods, metacognitive knowledge and skills, and affective components such as beliefs and emotions For example, domain specific knowledge involves facts, symbols, conventions, definitions, formulae, algorithms, concepts, and rules, which constitutes the content of subject matter. In designing the remedial self-learning materials steps have been taken to present materials in more dynamically structured form to make them flexibly accessible to children. For this, heuristic methods were followed involving systematic search strategies for problem analysis and transformation. This was perceived to be better than traditional trial-and-error strategy for increasing children' probability of success in solving problem in line with their metacognitive knowledge, that is knowing about their strengths, weaknesses and limits of their cognitive capacity

In designing the remedial activity, sheets following heuristic methods, the specific problem situations were carefully analysed by specifying the

knowns and unknowns, decomposing the problem into subcompetencies, finding an easier related or analogous problem, visualising the problem with drawing or diagrams, provisionally relaxing one of the constraints of the solution, and returning later to reimpose it These were used in developing two activity sheets for each of the 15 problem situations described later. For example, in formulating Activity sheet No 1 involving self-learning of multiplication problem on 'Equal Groups' class of problem entitled 'if there are 5 flowers in a flower pot, how many flowers in all will be there in 6 similar flower pots ?' the following process were followed. The problem was presented by decomposing into smaller addition problems of drawings of flower pots with flowers numbering 1, 2, 3, 4 & 5 for visualisation of children in transforming addition facts to multiplication along with hints from teachers for facilitating the learning. This is followed by activity sheet No. 2 containing the identification of knowns and unknowns from an analogous problem entitled 'If one child gets 7 oranges, how many oranges will 6 children get ?' After the solution processes were learned by the children during their self - study session, they were assigned a set of 4 similar problem tasks to assess their competency in mastering the specific problem situation Thus, 2 Activity Sheets for each of the 15 problem situations (2 x 15 = 30) could be presented to the non-masters one by one along with (4 x 15) = 60 assessment exercises during the period of their remedial instruction. The English versions of these 30 Activity Sheets, 60 Assessment Exercises, and instructions for the teachers have been included in this module as exemplars

Remedial Procedure

For teaching non-masters through Self Learning Activity Sheets, the children committing errors in different problem areas categories were

made to sit in a separate row. The following procedures could be followed during teaching - learning.

- The teacher can present first the self-learning activity sheet containing sets of pictures to each non-master child on a particular problem and instruct them to go slowly through the materials themselves one after the another set of pictures
- The teacher then could explain the pictures one by one following the explanatory notes given below each sets of pictures
- This is followed by the 2nd activity sheet on the same problem situation containing step-wise discussion of the problem The child who had difficulty in following the steps were given concrete materials like paper strips, sticks, beads etc. to manipulate and learn through performance of activities till their difficulties were removed

Activity 2 : Individual Activity

Read the Instructions to users and examine Thirty (30) Exemplar Self-learning Activity Sheets very carefully Ask clarifications to resource persons in case of doubts

Activity 3 : Brainstorming Group Session

Divide yourself into convenient groups. Group leader is to consolidate the group reports. Report of each group will be examined by other group. Items will be finalised with the help of resource persons. The groups will reflect on the following

- identify the hard spots in mathematical problems solving in different classes (each group can take up one class)
- develop diagnostic test items on hard spots.

Activity 4 : In School Situation / Under Stimulated Situation

Administer the test on sample students with learning difficulties drawn form nearby primary schools.

Activity 5 : Reflective Group Session

In the group sessions the following issues will be discussed and tasks will be performed

1. What is heuristic approach of learning problem solving ? State how it is a child-centered approach ?
2. Briefly discuss how can you make best use of self-learning materials for teaching mathematics in large-sized class rooms ?
3. List few distinct items on addition and substraction problems for diagnosing the learning difficulties of class II children.
4 Prepare self - learning activity sheets on addition and substraction problems for class II children
5. List a few wrong beliefs and attitudes which primary school children acquire about mathamatics

INSTRUCTION TO THE USERS / TEACHERS

This self learning instructional package consists of 30 Activity Sheets as described below .

Sl No	Problem class	Diagnostic Test items	Problem Types & Corresponding Activity sheet Nos		
			Multiplication Problems	Division by Multiplier	Division by Multiplicand
1	Equal Groups	1 2 3	1 & 2	3 & 4	5 & 6
2	Equal Measure	4 5 6	7 & 8	9 & 10	11 & 12
3	Rate	7 8 9	13 & 14	15 & 16	17 & 18
4	Measure Conversion	10 11,12	19 & 20	21 & 22	23 & 24
5	Multiplicative Conservasion	13 14 15	25 & 26	27 & 28	29 & 30

The users/teachers are advised to provide the specific set of activity sheets to the group of children having learning difficulties in the specific problem class and type corresponding to this set of activity sheets as have been listed above. For example, if some children are found having learning difficulties in item No. 3 of the diagnostic test, involving problem class' Equal Groups' and problem type "division by Multiplicand" then, those children will be provided with Activity sheets No. 5 and No 6 in succession. This process goes on repeating with the different groups of non- masters having learning difficulties in one or more problem class and type in succession until each of non-master children complete all activity sheets depending on their specific needs. After completion of their learning through the self learning activity sheets all the non-masters as well as masters will be again administered the criterion diagnostic parallel test form II

Activity Sheet follows :

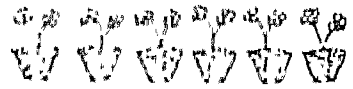
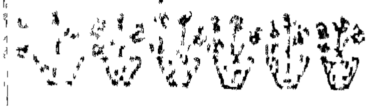
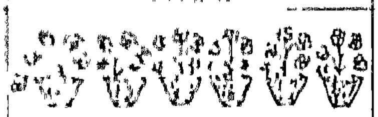
REMEDIAL PROBLEM TASKS ON MULTIPLICATION & DIVISION FOR CLASS - III

ACTIVITY SHEET - 1

Problem Class : Equal Groups
Sub-Class : Multiplication problem

After reading the following question, look at the pictures given below one by one

Question : If there are 5 flowers in a flower pot, how many flowers in all will be there in 6 similar flower pots?

Picture	How many flowers in each pot ?	How many such flower pots are there ?	How many flowers are there in all ?	How will you write the fact using multiplication ?
1st	 There is 1 flower	 6 flower pots having 1 flower each	1 + 1 + 1 + 1 + 1 + 1 = 6 In all 6 flowers	1 x 6 = 6 6 flowers
2nd	 There are 2 flowers	 6 flower pots having 2 flowers each	2 + 2 + 2 + 2 + 2 + 2 = 12 In all 12 flowers	2 x 6 = 12 12 flowers
3rd	 There are 3 flowers	 6 flower pots having 3 flowers each	3 + 3 + 3 + 3 + 3 + 3 = 18 In all 18 flowers	3 x 6 = 18 18 flowers
4th	 There are 4 flowers	 6 flower pots having 4 flowers each	4 + 4 + 4 + 4 + 4 + 4 = 24 In all 24 flowers	4 x 6 = 24 24 flowers
5th	 There are 5 flowers	 6 flower pots having 5 flowers each	5 + 5 + 5 + 5 + 5 + 5 = 30 In all 30 flowers	5 x 6 = 30 30 flowers

What do you know from the pictures ? Let us read the following :

1st Picture : As you find 1 flower in each of the 6 flower pots so you take 1 as multiplicand (1 to be repeated) and 6 as multiplier (6 times repeated) and find the product as 1 x 6 = 6 So we say there are 6 flowers in all

2nd Picture : As you find 2 flowers in each of the 6 flower pots, so you take 2 as multiplicand (2 to be repeated) and 6 as multiplier (6 times repeated) and find the product as 2 x 6 = 12 So we say there are 12 flowers in all

3rd Picture : As you find 3 flowers in each of the 6 flower pots, so you take 3 as multiplicand (3 to be repeated) and 6 as multiplier (6 times repeated) and find the product as 3 x 6 = 18 So we say there are 18 flowers in all

4th Picture : As you find 4 flowers in each of the 6 flower pots, so you take 4 as multiplicand (4 to be repeated) and 6 as multiplier (6 times repeated) and find the product as 4 x 6 = 24 So we say there are 24 flowers in all

5th Picture : As you find 5 flowers in each of the 6 flower pots, so you take 5 as multiplicand (5 to be repeated) and 6 as multiplier (6 times repeated) and find the product as 5 x 6 = 30 So we say there are 30 flowers in all

Therefore, **if there are 5 flowers in a flower pot, then there will be 30 flowers in all in 6 similar flower pots.**

ACTIVITY SHEET - 2

Problem class : Equal Groups
Sub-class : Multiplication problem

Read the question and its analytical discussion given below
Question : If one child gets 7 oranges how many oranges will 6 children get?

Analysis of the Question	**Response steps**
a) How many [illegible]	a) Each child gets 7 oranges
b) How many [illegible]	b) There are six children
c) How to get the total number of oranges asked in the question ?	c) By adding 6 times the number of oranges 7 that each gets 7 + 7+ 7 + 7 + 7 + 7 = 42
d) How to do the sum using multiplication fact	d) By multiplying 7 with 6 we find the product 7 x 6 = 42
e) Which is multiplicand multiplier and product in this multiplication fact ? Why they are called so ?	e) Since each child gets 7 oranges and same number of oranges are repeated for 6 children so 7 is multiplicand, 6 is multiplier and 7 x 6 = 42 is product
f) Write short [illegible] answer of the given question	f) Given that, one child gets 7 oranges, So 6 children will get, 7 x 6 = 42 oranges in all

Workout yourself the following sum as has been shown above in response steps

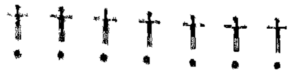
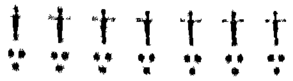
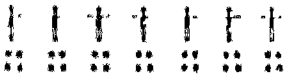
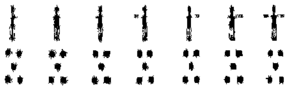
Sl. No	Questions	Space for writing your answer
1	If 8 parrots can be kept in a cage, then how many parrots in all can be kept in 9 such cages ?	
2.	If 7 trees ar planted in row, then how many trees can be planted in 8 rows ?	
3.	If a labourer carries 6 bricks on his head, then now many brick can be carried by 11 labourers on their heads ?	
4.	A cow has 4 feet What is the total number of feet of 12 cows ?	

ACTIVITY SHEET - 3

Problem Class : Equal Groups
Sub Class : Multiplication problem

After reading the following question look at the pictures given below one by one

Question : How many marbles each get if 35 marbles are distributed among 7 children equally ?

Picture	How many marbles are in each picture ?	Among how many children these marbles are distributed ?	How many marbles will one child get ?	How will the answer be written using division ?
1st	• • • • • • • There are 7 marbles	 [illegible]	 One will get 1 marble	7 - 7 = 1 Each will get 1 marble
2nd	• • • • • • • • • • • • • • There are 14 marbles	 [illegible]	 One will get 2 marbles	14 - 7 = 2 Each will get 2 marbles
3rd	• There are 21 marbles	 [illegible]	 One will get 3 marbles	21 - 7 = 3 Each will get 3 marbles
4th	• There are 28 marbles	 [illegible]	 One will get 4 marbles	28 - 7 = 4 Each will get 4 marbles
5th	• There are 35 marbles	 [illegible]	 One will get 5 marbles	35 - 7 = 5 Each will get 5 marbles

What did you know from the pictures ? Let's read the following :

1st Picture If 7 marbles be distributed equally among 7 children then, take 7 as dividend and divide it by the (definite) 7 children as divisor Since 1 x 7 = 7 So 7 - 7 = 1 Therefore, each child will get 1 marvel

2nd Picture If 14 marbles be distributed equally among 7 children then take 14 as dividend and divide it by the (definite) 7 children as divisor Since 2 x 7 = 14, So 14 - 7 = 2 Therefore, each child will get 2 marvels

3rd Picture If 21 marbles be distributed equally among 7 children then, take 21 as dividend and divide it by the (definite) 7 children as divisor Since 3 x 7 = 21 So 21 - 7 = 3 Therefore, each child will get 3 marvels

4th Picture If 28 marbles be distributed equally among 7 children then, take 28 as dividend and divide it by the (definite) 7 children as divisor Since 4x7 = 28 So 28 -7 = 4 Therefore, each child will get 4 marvels

5th Picture If 35 marbles be distributed equally among 7 children then take 35 as dividend and divide it by the (definite) 7 children as divisor Since 5x 7 = 35 So 35 - 7 = 5 Therefore, each child will get 5 marvels

Therefore if total 35 marbles are distributed equally among 7 children then each will get 35 + 7 = 5 marbles.

ACTIVITY SHEET - 4

Problem Class : Equal Groups
Sub-Class · Division (by Multiplier)

Read the question and its analytical discussion given below

Question : If 80 children stand equally in 8 rows, how many children stand in one row

Question	space for writing answers
a) If all 80 children stand in one row, how many children are in one row?	a) 80- 1 = 80 All 80 children are in one row
b) If all 80 children stand in two rows, how many children stand in one row?	b) 80÷ 2 = 40 40 childrenstand in one row
c) If all 80 children stand in 3 rows how many children stand in one row?	c) 80 - 3= 26 quotient & 2 remainder Here 80 is not completely divisible by 3 So it is not possible to find the number of children in each row
d) if all 80 children stand in 4 rows how many children stand in one row?	d) 80- 4 = 20 20 children stand in one row
e) Like this if all the 80 children stand in 80 rows how many children stand in one row?	e) 80 -8 = 10 10 children stand in one row
f) How will you write the answer of the given question in a shortcut method?	f) If 80 children stand equally in 8 rows, 80÷ 8 = 10 children stant in each row

Work out the questions from 1 - 4 by yourself in short method as has been shown above in response sheet

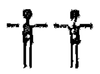
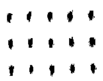
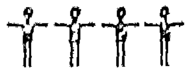
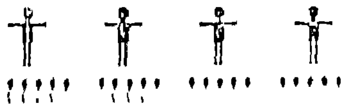
Sl No	Questions	Space for writing your Answer
1	How much money will one get if 65 rupees be distributed equally among 5 persons?	
2	If 54 black-berries are divided into 9 equal parts, how many black - berries will be in one part?	
3	How many students will sit on one bench if 63 children are seated in equal numbers in 9 benches?	
4	How many pomegranates will be put in own bag if 75 pomegranates are kept in 5 bags equally?	

ACTIVITY SHEET - 5

Problem class : Equal Groups
Sub-class : Multiplication problem

After reading the following question, look at the pictures given below one -by -one

Question : You have 20 balloons with you Among how many children all these balloons can be distributed so that each child gets 5 balloons ?

Picture	How many balloons are there ?	How many children are there ?	How many balloons can be given to each ?	How can the answer be written in division process ?
1st	 5 balloons	 There is 1 child	 5 balloons will be given to one child	5 - 5 = 1 can be distributed to 1 child
2nd	 10 balloons	 There are 2 children	 5 balloons will be given to one child	10 - 5 = 2 can be distributed equally among 2 children
3rd	 15 balloons	 There are 3 children	 5 balloons will be given to one child	15 - 5 = 3 can be distributed equally among 3 children
4th	 20 balloons	 There are 4 children	 5 balloons will be given to one child	20 - 5 = 4 can be distributed equally among 4 children

What did you know from the picture ? Let us read the following

1st picture To distributes 5 balloons among one child take 5 as dividend as well as divisor Remembering multiplication table of 5 the quotient was calculated as 5 x 1 = 5, 5 - 5 = 1 child got 5 balloons

2nd picture To distributes 10 balloons with 5 for each child take 10 as dividend and 5 as divisor Remembering multiplication table of 5 the quotient was calculated that is 2 times of 5 became 10, 10 - 5 = 2 children got equal number of balloons each

3rd picture To distributes 15 balloons with 5 for each child take 15 as dividend and 5 as divisor Remembering multiplication table of 5 the quotient was calculated that is 3 times of 5 became 15, 15 - 5 = 3 children got equal number of balloons each

4th picture To distributes 20 balloons with 5 for each child take 20 as dividend and 5 as divisor Remembering multiplication table of 5 the quotient was calculated that is 4 times of 5 became 20, 20 - 5 = 4 children got equal number of balloons each

Therefore, if 20 balloons are distributed with 5 for each child, 20 + 5 = 4 children will get equal number each

ACTIVITY SHEET - 6

Problem class . Equal Groups
Sub-class · Division (by multiplicand)

Read the question, and its analytical discussion given below

Question : What will be the number of children when 72 guavas are distribute equally among them such that each child gets 8 guavas ?

Analysis of the question	Response steps
a) How many guavas are there in the question ?	a) There are 72 guavas
b) How many guavas will be given to each child ?	b) Each child will get 8 guavas
c) If each child gets 1 guavas then how many children will get the total 72 guavas ?	c) 72 - 1 = 72 That means 72 children will get all the guavas
d) If each child gets 2 guavas then how many children will get the total 72 guavas?	d) 72 - 2 = 36 That means 36 children will get all the guavas
e) If each child gets 3 guavas then how many children Will get the total 72 guavas ?	e) 72 - 3 = 24 That means 24 children will get all the guavas
f) Think, if each child gets 8 guavas then how many children will get the total 72 guavas ?	f) 72 - 8 = 9 That means 9 children will get Here the division process has been done from the multiplication table of 8 by taking 72 as dividend as 8 as divisor 72 - 8 = 9
g) Now write the answer of the given question in a shortcut method	g) The total number guavas are 72 If one child gets 8 guavas 72 ÷ 8 = 9 children get all the guavas

Workout question from No. 1 to 4 by yourself in a shortcut method as has been shown above in response step

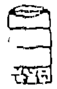
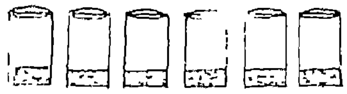
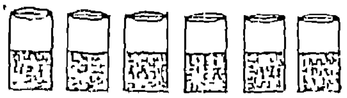
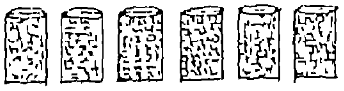
Sl No	Questions	Space for writing your answer
1	Calculate the number of girls among whom 63 chalk pieces are equally distributed when each girl gets 7 pieces of chalk ?	
2	If one copy can be made with 10 paper sheets, then how many copies can be made with 100 paper sheets ?	
3	If one garland is made with 12 flowers, then how many garlands can be made with 96 flowers ?	
4	There are 42 bananas with Rama Among how many children will those be distributed so that each child gets 6 bananas ?	

ACTIVITY SHEET - 7

Problem Class : Equal Measures
Sub-Class . Multiplication Problem

Read the following question carefully and look at the pictures given below one by one

Question : If 1 tin contains 4 litres of oil, how much litre of oil will 6 similar tins hold?

Picture	How much oil is in each tin ?	What is the total no of tins ? How much litre of oil is in each tin ?	What is the total quantity of oil ?	How to write the answer in multiplication fact ?
1st	 There is 1 litre of oil	 1 Litre oil is in each of 6 tins	(1 + 1 + 1 + 1 + 1 + 1)Lt 6 Litres	1 x 6 = 6 6 Litres Oil
	 There is 2 litres of oil	 2 Litres oil is in each of 6 tins	(2 + 2 + 2 + 2 + 2 + 2)Lt 12 Litres	2 x 6 = 12 12 Litres Oil
3rd	 There is 3 litres of oil	 3 Litres oil is in each of 6 tins	(3 + 3 + 3 + 3 + 3 + 3)Lt 18 Litres	3 x 6 = 18 18 Litres Oil
4th	 There is 4 litres of oil	 4 Litres oil is in each of 6 tins	(4 + 4 + 4 + 4 + 4 + 4)Lt 24 Litres	4 x 6 = 24 24 Litres oil

What did you see from the pictures ? Let us discuss the following :

1st picture	There is 1 litre oil in each of 6 tins Taking 1 as multiplicand and 6 as multiplier (6 times) the product is 1 x 6 = 6 So there is 6 litres of oil
2nd picture	There is 2 litres oil in each of 6 tins Taking 2 as multiplicand and 6 as multiplier (6 times) the product is 2 x 6 = 12 So there is 12 litres of oil
3rd picture	There is 3 litres oil in each of 6 tins Taking 3 as multiplicand and 6 as multiplier (6 times) the product is 3 x 6 = 18 So there is 18 litres of oil
4th picture	There is 4 litres oil in each of 6 tins Taking 4 as multiplicand and 6 as multiplier (6 times) the product is 4 x 6 = 12 So there is 12 litres of oil

Therefore, there will be 24 litres of oil in 6 tins if 4 litres of oil is in one tin

ACTIVITY SHEET - 8

Problem Class : Equal Measures
Sub-Class : Multiplication Problem

Read the question and its analytical discussion given below

Question : If 25 kg of rice can be kept in a bag, how much quantity of rice be kept in 8 such bags?

Analysis of the Question	Response Steps
a) How much quantity of rice is kept in each bag in the given question ?	a) There is 25 kg of rice in each bag
b) How many such [illegible] containing 25 kg of rice [illegible]	b) There are 8 such bags
[illegible]	c) We get the answer by adding 25 kg of rice for 8 times, i e 25+ 25+25+25+25+ 25+25+25 = 200 200 Kg of rice can be kept in 8 bags
d) How can it be expressed differently ?	d) Taking 25 as multiplicand and 8 as multiplier the product can be expressed like 25 x 8 = 200 200 Kg. of rice can be kept in 8 bags
e) Write in short the complete answer of the given question	e) There is 25 kg of rice each in one bag So in 8 bags 25 x 8 = 200 kg of rice can be kept.

Workout yourself the following sums as has been shown in responses step - (e)

Sl No	Questions	Space for writing your answers
1	There is 5 kg of flour in 1 packet How much quantity of flour will be in 23 such packets	
2	A tin contains 4 litres of ghee. How much quantity of ghee can be in 13 such tins	
3	A polythin packet contains 100 grams of turmeric powder How much quantity of turmeric powder can be kept in 7 such packets ?	
4	A piece of rope is 35 metres long What will be the length of 4 such pieces ?	

ACTIVITY SHEET - 9

Problem Class : Equal Measures
Sub-Class : Division (by multiplier)

Read the following question carefully and look at the pictures given below one by one

Question : 20 litres of oil are kept in 5 equal tins. How much oil can be kept in one such tin ?

Picture	How much litres of oil is there in total ?	What is the total number of tins are there ? How much quantity of oil is in each tin ?	What is the total quantity of oil in litre ?	How much quantity of oil is in each tin ?	How can the answer be written using division fact ?
1st	 5 litres ?	 [illegible]	1 + 1 + 1 + 1 + 1 litre [illegible] 1 x 5 = 5 litres	 1 litre oil is there	5 ÷ 5 = 1 1 litre
2nd	 10 litres ?	 [illegible]	2 + 2 + 2 + 2 + 2 litre [illegible] 2 x 5 = 10 litres	 2 litres oil is there	10 ÷ 5 = 2 2 litres
3rd	 15 litres ?	 [illegible]	3 + 3 + 3 + 3 + 3 litre [illegible] 3 x 5 = 15 litres	 3 litres oil is there	15 ÷ 5 = 3 3 litres
4th	 20 litres ?	 [illegible]	4 + 4 + 4 + 4 + 4 litre [illegible] 4 x 5 = 20 litres	 4 litres oil is there	20 ÷ 5 = 4 4 litres

What did you know from the pictures ? Let's read the following:

1st Picture . To keep total 5 litres of oil in 5 tins (definite) in equal quantity, taking 5 as dividend and 5 as divisor the division work is to be done Since 1 x 5 = 5, so 5 ÷ 5 = 1 litre of oil will be in each tin

2nd Picture : To keep total 10 litres of oil in 5 tins (definite) in equal quantity, taking 10 as dividend and 5 as divisor, the division work is to be done Since 2 x 5 = 10, so 10 ÷ 5 = 2 litres of oil will be in each tin

3rd Picture . To keep total 15 litres of oil in 5 tins (definite) in equal quantity, taking 15 as dividend and 5 as divisor the division work is to be done Since 3 x 5 = 15, so 15 ÷ 5 = 3 litres of oil will be in each tin

4th Picture : To keep total 20 litres of oil in 5 tins (definite) in equal quantity, taking 20 as dividend and 5 as divisor the division work is to be done Since 4 x 5 = 20, so 20 ÷ 5 = 4 litres of oil will be in each tin

Therefore, if 20 litres of oil can be kept equally in 5 tins, then each tin will contain, 20 ÷ 5 = 4 litres of oil.

ACTIVITY SHEET - 10

Problem Class : Equal Measures
Sub-Class : Division (by multiplier)

Read the question and its analytical discussion given below

Question 28 kg of flour is kept equally in 4 packets How much quantity of flour is available in each packet ?

Analysis of the question	Response Steps
a) If the total 28 mg of flour is kept equally in 2 packets, then how much quantity of flour will be in each packet ?	a) 28 ÷ 1 = 28 That is, 28 kg of flour will be kept in one packet
b) If total 28 kg of flour is kept equally in 2 packets, then how much quantity of flour will be in each packet ?	b) 28 - 2 = 14 That is, there will be 14 kg of flour in each packet
c) If total 28 kg of flour is kept equally in 3 packets then how much quantity of flour will be in each packet ?	c) 28 ÷ 3 = 9 quotient & 1 remainder It is not completely divisible So equal quantity of flour can not be kept in each packet
d) If total 28 kg of flour is kept equally in 4 packets, then how much quantity of flour will be in each packet ?	d) 28 ÷ 4 = 7 That is there will be 7 kg of flour in each packet
e) How Will you write the answer of the given question in shot cut method ?	e) If the total 28 kg of flour kept equally in 4 packets then there will be, 28 - 4=7 kg of flour in each packet

Workout the questions from 1 to 4 by yourself in shortcut method as has been shown above in response step (e).

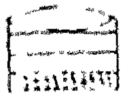
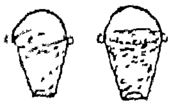
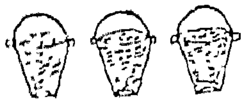
Sl No	Question	Space for writing your answer
1	If 135 kg of potato is kept equally in 9 bags then how much quantity of potato will be in each bag ?	
2	if 80 litre of milk is kept equally in 16 polythin packet, then how much quantity of milk will be in each packet ?	
3	How many pieces of rope of 7 metres long each can be cut from a 91 metres long rope ?	
4	105 liters of kerosene oil was kept equally in 5 tins How much quantity of oil could be kept in each tin ?	

ACTIVITY SHEET - 11

Problem class : Equal Measures
Sub-class : Division (by Multiplicand)

After reading the following question, look at the pictures given below one -by -one

Question In how many buckets can 40 liters of water be put if one such can hold 10 liters of water ?

Picture	Bucket holding 10 liters of water	How much quantity of water is in each bucket ?	How many buckets are there holding 10 liters of water?	How can the answer be written in division process?
1	 Bucket of 10 liters water	 10 liters water	 One bucket with 10 liters of water	10- 10 - 1 One bucket
2	 Bucket of 10 liters water	 20 liters water	 2 buckets with 10 liters of water	20 – 10 2 2 buckets
3	 Bucket of 10 liters water	 30 liters water	 3 buckets with 10 liters of water	30 10 3 3 buckets
4	 Bucket of 10 liters water	 40 liters water	 4 buckets with 10 liters of water	40 10 – 4 4 buckets

What did you know form the pictures ? Let us read the following.

1st Picture : One bucket of 10 liters capacity was needed to hold 10 liters of water So the quotient was made from the multiplication table of 10 taking 10 as dividend and 10 (definite bucket holding 10 liters of water) as divisor As 1 time of 10 is 10, so 10 ÷ 10 = 1 bucket holds 10 liters of water each Hence there is 10 liters of water in each bucket

2nd Picture : 2 buckets of 10 liters capacity was needed to hold 20 liters of water So the quotient was made from the multiplication table of 10 taking 20 as dividend and 10 (definite bucket holding 10 liters of water) as divisor As 2 times of 10 is 20, so 20 – 10 = 2 buckets holds 10 liters of water each. Hence there is 10 liters of water in each bucket

3rd Picture : 3 buckets of 10 liters capacity was needed to hold 30 liters of water So the quotient was made from the multiplication table of 10 taking 30 as dividend and 10 (definite bucket holding 10 liters of water) as divisor As 3 times of 10 is 30, so 30 ÷ 10 = 3 bucket holds 10 liters of water each. Hence there is 10 liters of water in each bucket

4th Picture : 4 buckets of 10 liters capacity was needed to hold 40 liters of water. So the quotient was made from the multiplication table of 10 taking 40 as dividend and 10 (definite bucket holding 10 liters of water) as divisor As 4 times of 10 is 40, so 40 – 10 = 4 buckets holds 10 liters of water each Hence there is 10 liters of water in each bucket

Therefore in order to keep 40 liters of water in 4 buckets of 10 liters capacity each, 40 + 10 = 4 buckets will be needed

ACTIVITY SHEET - 12

Problem Class · Equal Measures
Sub-Class : Division (by Multiplicand)

Read the question and its analytical discussion given below

Question How many tins will be required to keep 48 liters of ghee, if one tin holds 4 liters of ghee ?

Analysis of the Question	Response Steps
a) How much quantity of ghee is given in the question ?	a) Total 48 liters of ghee is given in the question
b) How much liters of ghee will be kept in each tin ?	b) 4 liters of ghee will be kept in each tin
c) How many tins of 1 liter capacity each will be required to kept 48 liters ghee	c) 48 - 1 = 48 So 48 tins will be required
d) How many tins of 2 liters capacity each will be required to keep 48 liters ghee ?	d) 48 - 2 = 24 So 24 tins will be required
e) How many tins of 3 liters capacity each will be required to keep 48 liters ghee	e) 48 - 3 = 16 So 16 tins will be required
f) How many tins of 4 liters capacity each will be required to keep 48 liters ghee	f) 48 - 4 = 12 So 12 tins will be required
g) Now write the answer of the question in short cut method	g) There is 48 liters of ghee To keep 4 liters ghee in each tin, 48 - 4 = 12 tins will be required

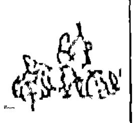
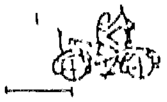
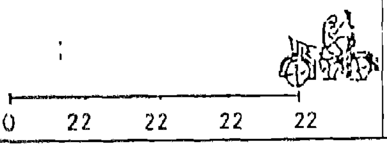
Sl No	Questions	Space for writing your answer
1	In how many packets will you keep 45 kg salt if one packet holds 3 kg salt ?	
2	In how many pots will you put 76 liters curd if one pot holds 4 liter curd ?	
3	How many 9 cm. long pieces will be cut out of a 99 cm. long wire ?	
4	How many bus stoppage will be there in 100 km. if the distance from one stoppage to another is 20 km ?	

ACTIVITY SHEET - 13

Problem Class : Rate
Sub-Class : Multiplication Problem

After reading following question, look at the pictures given below one - by - one

Question . Hari goes 22 kms per hour by his motor cycle. How many kms will he go in 4 hour ?

Picture	What is the Speed of Hari per hour?	How many kms he goes in different times?	What is the total length of distance he goes ?	How will you write the answer using multiplication fact?
1st	 22 km/hr	In one hour 0 22	He goes 22 kms in one hour	(22 km/hr) x 1 hr = 22 km
2nd	 22 km/hr	In 2 hours 0 22 22	In 2 hours he goes 22 kms + 22 kms 44 kms	(22 km/hr) x 2 hr = 44 km
3rd	 22 km/hr	In 3 hours 0 22 22 22	In 3 hours he goes 22 kms + 22 kms + 22 kms 66 kms	(22 km/hr) x 3 hr = 66 km
4th	 22 km/hr	In 4 hours  0 22 22 22 22	In 4 hours he goes 22 kms + 22 kms + 22 kms + 22 kms = 88 kms	(22 km/hr)x 4 hr 88 km

What did you know from the pictures? Let us read the following :

1st Picture Hari goes 22 km per hour The product was calculated taking his speed 22 km/hr as multiplicand and the 1 hour time as multiplier So in 1 hour he will go (22 km/hr) x 1 hr = 22 km

2nd Picture: Hari goes 22 km per hour The product was calculated taking his speed 22 km/hr as multiplicand and the 2 hours time as multiplier So in 2 hours he will go (22 km/hr) x 2 hr = 44 km

3rd Picture: Hari goes 22 km per hour The product was calculated taking his speed 22 km/hr as multiplicand and the 3 hours time as multiplier So in 3 hours he will go (22 km/hr) x3 hr = 66 km

4th Picture. Hari goes 22 km per hour The product was calculated taking his speed 22 km/hr as multiplicand and the 4 hours time as multiplier So in 4 hours he will go (22 km/hr) x 4 hr = 88 km

Therefore, if Hari goes 22 km per hour by his motor cycle, then he will go 88 km in 4 hours.

ACTIVITY SHEET - 14

Problem Class : Rate
Sub-Class : Multiplication Problem

Read the question and its analytical discussion given below
Question . A child can run 110 metres per minute How much distance he will cover in 6 minutes

Analysis of the Question	Response Steps
a) How much distance can the child run per minute ?	a) The child can run 110 metres per minute
b) How much total time did he takes to run ?	b) Heruns 6 minutes in total journey
c) How will you know that hoe much distance did he cover in 6 minutes	c) By adding 6 times to 110 We get 110 mt + 110 mt + 110mt 110mt+110mt+110 mt = 660 minutes
d) How can it be known in any other way ?	d) It can be known taking 110 mt as multiplicand 6 minutes as multiplier That is 110 x 6 = 660 So in 6 minutes the child will cover 660 metres
e) How can you write the answer in short cut process ?	e) The child can run 110 mts per minutes In 6 minutes he can run 110 mts x 6 = 660 metres

Sl No	Questions	Space for writing your answer
1	A train goes 65 km in an hour How much distance it will cover in 7 hours ?	
2	A factory can make 15 watches in one hour How many watches it can make in 11 hours ?	
3	A bullock cart cover 5 kms in 1 hour How much distance it will cover in 23 hours ?	
4	One dozen match boxes costs 4 rupees What will be the cost of 26 dozen matches boxes ?	

ACTIVITY SHEET - 15

Problem Class : Rate
Sub-Class : Division (by Multiplier)

After reading the following question look at the pictures given below one-by-one

Question A man goes 30 kms in 5 hours by a bicycle How much distance will he go in one hour ?

Picture	What is the total distance ?	In how much time does he go ?	How much distance will he cover in 1 hour ?	How can the answer be written in division process ?
1	0 5kms	In 5 hours	0 1 5kms	5 - 5 = 1 In 1 hour he will go 1 km
2	0 10km	In 5 hours	0 2 10km	10 - 5 = 2 In 1 hour he will go 2 km
3	0 15km	In 5 hours	0 3 15km	15 - 5 = 3 In 1 hour he will go 3 km
4	0 20km	In 5 hours	0 4 20km	20 - 5 = 4 In 1 hour he will go 4 kms
5	0 25km	In 5 hours	0 5 25km	25 - 5 = 5 In 1 hour he will go 5 km
6	0 30km	In 5 hours	0 6 30km	30 - 5 = 6 In 1 hour he will go 6 kms

What did you know from the picture ? Let us read the following :

1st Picture : The man goes 5 kms distance in 5 hours by a bicycle In order to know his speed per hour, we have to divide 5 (dividend) by the divisor 5. Since 1 x 5 = 5, we can write, 5 – 5 = 1 That is his speed per hour is 1 km

2nd Picture · The man goes 10 kms distance in 5 hours by a bicycle In order to know his speed per hour, we have to divide 10 (dividend) by the divisor 5 Since 2 x 5 = 10, we can write, 10 – 5 = 2 That is his speed per hour is 2 kms

3rd Picture . The man goes 15 kms distance in 5 hours by a bicycle In order to know his speed per hour, we have to divide 15 (dividend) by the divisor 5 Since 3 x 5 = 15, we can write, 15 – 5 = 3 That is his speed per hour is 3 kms

4th Picture : The man goes 20 kms distance in 5 hours by a bicycle In order to know his speed per hour, we have to divide 20 (dividend) by the divisor 5 Since 4 x 5 = 20, we can write, 20 – 5 = 4 That is his speed per hour is 4 kms

5th Picture The man goes 25 kms distance in 5 hours by a bicycle In order to know his speed per hour, we have to divide 25 (dividend) by the divisor 5 Since 5 x 5 = 25, we can write, 25 – 5 = 5 That is his speed per hour is 5 kms

6th Picture The man goes 30 kms distance in 5 hours by a bicycle In order to know his speed per hour, we have to divide 30 (dividend) by the divisor 5 Since 6 x 5 = 30, we can write, 30 – 5 = 6 That is his speed per hour is 6 kms

Therefore if a man goes 30 kms in 5 hours, then he will go 6 kms in one hour.

ACTIVITY SHEET - 16

Problem Class · Rate
Sub-Class . Division (by Multiplier)

Read the question and its analytical discussion is given below

Question · A man goes 16 kms in 4 hours by a bullock cart How much distance will he go in 1 hour ?

Analysis of the Question	Response Steps
a) What is the total distance the man by the bullock cart ?	a) The man covered the total covered 16 km distance in 4 hours by the bullock cart
b) What is the speed of the man per hour, if he goes 16 kms distance in one hour ?	b) 16 ÷ 1 = 16 That is the speed of the man in bullock cart is16 kms per hour
c) What is the speed of the man per hour, if he goes 16 km distance in 2 hours ?	c) 16 - 2 = 8 That is the speed of the man in bullock cart is 8 kms per hour
d) What is the speed of the man per hour, if he goes 16 km distance in 3 hours ?	d) 16 - 3 = quotient 5 and remainder is 1 As it is not completely divisible by 3 the speed per hour can not be found out in complete km
e) What is the speed of the man per houı, if he goes 16 km distance in 4 hours	e) 16 - 4 = 4 That is the speed of the man per hour is 4 km, if the man covers the 16 kms distance in 4 hours
f) How would you write the answer in shortcut method ?	f) If the man covers 16 km distance in 4 hours the speed per hour will be 16 - 4 = 4km per hour

Workout questions form No 1 to 4 by yourself in shortcut method as has been shown above in response step

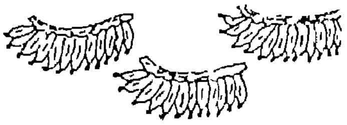
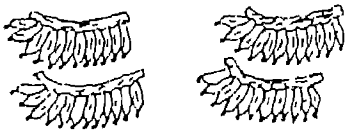
Sl No	Questions	Space for writing your answer
1	If a boy writes 104 pages in 8 hours, then how many pages can he write in one hour ?	
2	A machine prepares 196 sack - bags in 4 hours How many sack bags can the machine prepare in 1 hour ?	
3	An aeroplane cover 91 kms in 7 minutes What is the distance that it can cover in one minute ?	
4	A motor vehicle goes 1200 kms in 2 hours 1 What is the rate of speed per hour ?	

ACTIVITY SHEET - 17

Problem Class . Rate
Sub-Class : Division (by Multiplicand)

After reading the following question, look at the pictures given below one by one

Question · If one dozen bananas costs 7 rupees, then how many dozen bananas will be available for 28 rupees ?

Picture	What is the cost of one dozen bananas?	What amount of banana will be purchased?	How many dozen of bananas will be available?	How will you write the answer in division process?
1st	 One dozen bananas costs 7 rupees	Bananas worth 7 rupees will be purchased	 One dozen bananas will be available	7 - 7 - 1 One dozen bananas
2nd	 One dozen bananas costs 7 rupees	Bananas worth 14 rupees will be purchased	 2 dozen bananas will be available	14 7 2 2 dozen bananas
3rd	 One dozen bananas costs 7 rupees	Bananas worth 21 rupees will be purchased	 3 dozen bananas will be available	21 7 3 3 dozen bananas
4th	 One dozen bananas costs 7 rupees	Bananas worth 28 rupees will be purchased	 4 dozen bananas will be available	28 7 4 4 dozen bananas

What did you know from the picture ? Let us read the following

1st Picture : 1 dozen bananas at the rate of 7 rupees per dozen will be available for 7 rupees Here 7 rupees as dividend is divided by divisor 7 (rate per dozen) As 7 x 1 = 7 So 7 - 7 = 1 dozen bananas will be available

2nd Picture 2 dozen bananas at the rate of 7 rupees per dozen will be available for 14 rupees Here 14 rupees as dividend is divided by divisor 7 (rate per dozen) As 7 x 2 = 14 So 14 ÷ 7 = 2 dozen bananas will be available

3rd Picture · 3 dozen bananas at the rate of 7 rupees per dozen will be available for 21 rupees. Here 21 rupees as dividend is divided by divisor 7 (rate per dozen) As 7 x 3 = 21 So 21 ÷ 7 = 3 dozen bananas will be available

2nd Picture . 4 dozen bananas at the rate of 7 rupees per dozen will be available for 28 rupees Here 28 rupees as dividend is divided by divisor 7 (rate per dozen) As 7 x 4 = 28 So 28 ÷ 7 = 4 dozen bananas will be available

Therefore 4 dozen bananas will be available for 28 rupees at the rate of 7 rupees per dozen.

ACTIVITY SHEET - 18

Problem Class : Rate
Sub-Class : Division (by Multiplicand)

Read the question and its analytical discussion given below

Question : How much kg of rice for 30 rupees will be purchased at the rate of 6 rupees per kg

Analysis of the Question	Response Steps
a) What amount of money has been given in the question	a) Total 30 rupees has been given
b) What is the price of rice per kg ?	b) The price of rice per kg is 6 rupees
c) How much kg of rice can be purchased for 30 rupees, if the price of rice per kg is 1 rupees	c) 30 ÷ 1 = 30 It means 30 kg of rice can be purchased
d) How much kg of rice can be purchased for 30 rupees, if the price of rice per kg is 2 rupees ?	d) 30 ÷ 2 = 15 It means 15 kg of rice can be purchased
e) How much kg of rice can be purchased for 30 rupees, if the price of rice per kg is 3 rupees ?	e) 30 ÷ 3 = 10 It means 10 kg rice can be purchased
f) Thinking in succession that way, say how much kg of rice can be purchased for 30 rupees, if the price of rice per kg is 6 rupees ?	f) 30 ÷ 6 = 5 It means 5 kg of rice can be purchased
g) Write the answer of the question in shortcut process	g) If the price of rice per kg is 6 rupees for 30 rupees 30 ÷ 6 =5 kg of rice can be purposed

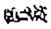
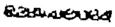
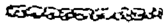
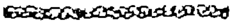
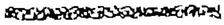
Sl No	Questions	Space for writing answer
1	What time will a Jeep take to cover a distance of 159 kms If its speed per hour is 53 kms ?	
2	How much meters of cloth can be purchased for 225 rupees if the rate per metre is 45 rupees ?	
3	An aeroplane goes 100 mts per second. How much time will it take to cover a distance of 900 mts ?	
4	Water enters into a jar through a pipe at the rate of 20 liters per minute How much time will it take to fill up 140 litres of water ?	

ACTIVITY SHEET - 19

Problem Class : Measure Conversion
Sub-Class : Multiplication Problem

After reading the following question, look at the pictures given below one - by - one

Question : A rope of 1metre long is 100 cm How many centimetre will be a 4 m long rope ?

Picture	How many cm is a metre?	What is the length of the rope in metre?	What is the length of the rope in cm ?	How will you write the answer in multiplication fact ?
1st	0 1m 100 cm	0 1m 1 metre	0  1m 100 c m	100x1 100 100 cm
2nd	0 1m 100 cm	0  2m 2 metres	0 2m (100 + 100)cm 200 cm	100x2 200 200 cm
3rd	0 1m 100 cm	0 3m 3 metres	0  3m (100 100 100)cm 300 cm	100x3 300 300 cm
4th	0 - 1m 100 cm	0  4m 4 metres	0  4m (100 + 100+100 + 100)cm - 400cm	100x4 400 400 cm

What did you know from the picture ? Let us read the following :

1st Picture : 1 metre is equal to 100 centimetre In order to know the length of one metre rope, we have to take 100 cm long rope as multiplicand and 1 metre as multiplier and the product is to be calculated So 100 cm x 1 = 100 cm It means the length of 1 metre long rope is equal to 100 cm

2nd Picture 1 metre is equal to 100 centimetre In order to know the length of 2 metres rope, we have to take 100 cm long lope as multiplicand and 2 metres as multiplier and the product is to be calculated So 100 cm x 2 = 200 cm It means the length of 2 metre long rope is equal to 200 cm

3rd Picture 1 metre is equal to 100 centimetre In order to know the length of 3 metre rope, we have to take 100 cm long rope as multiplicand and 3 metres as multiplier and the product is to be calculated. So 100 cm x 3 = 300 cm It means the length of 3 metre long rope is equal to 300 cm

4th Picture 1 metre is equal to 100 centimetre In order to know the length of 4 metre rope, we have to take 100 cm long lope as multiplicand and 4 metres as multiplier and the product is to be calculated So 100 cm x 4 = 400 cm It means the length of 4 metre long rope is equal to 400 cm

Therefore, if one metre long rope is 100 cm., then 4 metres long rope is 400 cm.

ACTIVITY SHEET - 20

Problem Class : Measure Conversion
Sub-Class : Multiplication Problem

Read the question and its analytical discussion given below

Question : A week have 7 days how many days will have 9 weeks ?

Analysis of the Question	Response Steps
a) How many days have a week ?	a) A week have 7 days
b) What is to be calculated here ?	b) The number of days for 9 weeks is to be claculated here
c) How will you know that, how many days will make 2 weeks, if 7 days make one week	c) One week which is 7 days will be added 2 times That is, 7 days + 7 days = 14 days
d) How will you know that how many days will make 3 weeks, if 7 days make one week	d) One week which is 7 days will be added 3 times That is 7 days+7 days+ 7days=21 days
e) Similarly calculating, how will you know that how many days will make 9 weeks, if 7 days make one week ?	e) One week which is 7 days will be added 9 times That is 7 days+7 days+ 7days +7days +7days+7days+7days+7days +7days= 63 days
f) How will you express it in other way ?	f) It can be expressed as product of 7 and 9 by taking 7 as multiplicand and 9 as multiplier That is 7 x 9= 63 days
g) Write in short the complete answer of the given question	g) if one week have 7days, 9 weeks have 7 x 9 = 63 days

Workout the questions from 1 to 4 by yourself in shortcut method as has been shown above in response step (g)

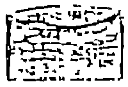
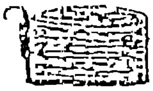
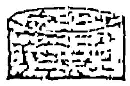
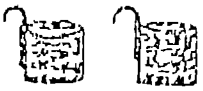
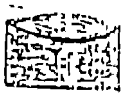
Sl No	Question	Space for writing your answer
1	If one feet is approximately 30 cm. long, then how many cm. long will be 9 feet ?	
2	How many days will make 8 months, if one month have 30 days ?	
3.	If 100 paise make one rupee, then how many paise will make 8 rupees ?	
4	How many cm will be a 4 m long cloth, if one metre long cloth is 100 cm. ?	

ACTIVITY SHEET - 21

Problem Class : Measure Conversion
Sub-Class : Division (by multiplier)

After reading the following question, look at the pictures given below one by one

Question : How much ml of oil will be in one oil can if 4 oil can of equal size are needed to hold 1 litre oil ?

Pic-ture	How much quantity of oil is there?	what is the relation between litre & ml ?	How many cans are there to hold 1 litre oil ?	How much quantity of oil is in each can?	How will you write the answer in division Process?
1st	 There is one litre oil	1 litre - 1000 ml	 There is one can of 1000 ml capacity	1000ml 1000x1 There is 1000 ml oil in the can	1000 1 1000 1000ml
2nd	 There is one litre oil	1 litre 1000 ml	 There are 2 cans of 500 ml capacity each	1000 ml 500x2 There is 500 ml oil in each can	1000 2 500 500 ml
3rd	There is one litre oil	1 litre - 1000 ml	There are 3 empty cans	1000 ml is not the multiple of 3 So equal quantity of oil in 3 cans can not be kept	1000 3 not divisible completely and not a whole number
4th	 There is one litre oil	1 litre 1000 ml	There are 4 cans of 250 ml capacity each	1000ml 250x4 There is 250 ml oil in each can	1000 4 250 250 ml

What did you know from the pictures ? Let's read the following :

1st Picture · Since there is 1 litre of oil to be kept in a can of 1 litre capacity, therefore to know the amount of oil, we need to divide 1000 ml (1 litre) by 1 (no of oil cans) As 1000 x 1 = 1000, so 1000 - 1 = 1000 So, 1 oil can hold 1 litre of oil

2nd Picture Since there is 1 litre of oil to be kept in two oil-cans of 500 ml capacity, therefore to know the amount of oil, we need to divide 1000 ml (1 litre) by 2 (no of oil cans) As 500 x 2 = 1000, so 1000 ÷ 2 = 500 So, 1 oil can hold 500 ml of oil

3rd Picture · One litre oil can not be put in 3 oil cans in equal quantity, because 1000 is not the multiple of 3 So, each oil can in this picture is kept empty

4th Picture · Since there is 1 litre of oil to be kept in 4 oil-cans of 250 ml capacity, therefore to know the amount of oil, we need to divide 1000 ml (1 litre) by 4 (no of oil cans) As 250 x 4 = 1000, so 1000 - 4 = 250 So 1 oil can hold 250 ml of oil

Therefore in each oil can there will be 250 ml. of oil if 1 litre is kept in 4 oil cans of equal quantity each.

ACTIVITY SHEET - 22

Problem Class : Measure Conversion
Sub-Class : Division (by multiplier)

Read the question and its analytical discussion given below

Question : If 4 kg rice weights 4000 grams, then what will be the weight of 1 kg of rice in grams ?

Analysis of the Question	Response Steps
a) What is the weight of rice in the measure of kg	a) The weight of rice in the measure of kg is 4 kg
b) What is the weight of rice in grams of the same weight of rice ?	b) The weight of same rice in grams is 4000 grams
c) What is to be calculated form the question ?	c) The weight of 1 kg rice in terms of grams is to be calculated
d) How that can be calculated ?	d) That can be calculated by dividing 4000 grams by 4
e) How can one kg of rice will be expressed in grams ?	e) 4000gm ÷ 4 = 1000 gm
f) Write in short the complete answer of the given question	f) If 4 kg weight of rice is 4000gm. then the weight of 1 kg rice will be, 4000 gm. - 4 = 1000 gm

Workout the questions from 1 to 4 by yourself in shortcut method as has been shown above in response step (f)

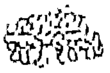
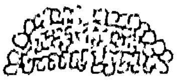
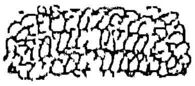
Sl No	Questions	Space for writing your Answer
1	If 3 feet length of ribbon tape is 90 cm., then how much 1 feet of ribbon in cms. will be ?	
2	If 5 rupees equals to 500 paise , then how many paise 2 rupees will be ?	
3	If 8 litres of kerosene oil equals to 8000 ml , then how much mls 3 litres will be ?	
4	If 4 hours equal to 240 minutes then how many minutes will be equal to 3 hours	

ACTIVITY SHEET - 23

Problem Class : Measure Conversion
Sub-Class : Division (by multiplicand)

After reading the following question, look at the pictures given below one by one.

Question : How many such baskets will be required to keep 2 kg of potatoes if there are 500 gms of potatoes in a basket ?

Pic-ture	How much quantity of potatoes are there?	How much potatoes does a basket contain?	How many baskets are required to contain all the potatoes ?	How will you write the answer in division process?
1st	 There are 500 gms of potatoes	 One bag contains 500 grams of potatoes	 One basket can contain all the 500 grams of potatoes	500 500 1 1 basket
2nd	 There are 1 kg (1000 gm) of potatoes	 One bag contains 500 grams of potatoes	 2 baskets can contain all 1 kg of potatoes	1000 500 2 2 baskets
3rd	 There are 1 kg 500 gms (1500 gm) of potatoes	 One bag contains 500 grams of potatoes	 3 baskets can contain all 1 kg 500 gms of potatoes	1500 - 500 - 3 3 baskets
4th	 There are 2 kg (2000 gms) of potatoes.	 One bag contains 500 grams of potatoes	 4 baskets can contain all 2 kg of potatoes	2000 500 4 4 baskets

What did you know from the pictures ? Let's read the following

1st Picture : One basket with a capacity of 500 grams of potatoes is required to hold all the 500 grams Thus taking 500 as dividend and 500 (the basket containing 500 gms of potatoes) as divisor the quotient was derived by the division process Since, 1 time of 500 is 500, so, 500 - 500 = 1 basket was needed.

2nd Picture · 2 baskets with a capacity of 500 grams of potatoes is required to hold all the 1000 grams Thus taking 1000 as dividend and 500 (the basket containing 500 gms of potatoes) as divisor the quotient was derived by the division process Since, 2 time of 500 is 1000, so, 1000 - 500 = 2 baskets were needed.

3rd Picture : 3 baskets with a capacity of 500 grams of potatoes is required to hold all the 1500 grams Thus taking 1500 as dividend and 500 (the basket containing 1500 gms of potatoes) as divisor the quotient was derived by the division process Since, 3 time of 500 is 1500, so, 1500 ÷ 500 = 3 baskets were needed

4th Picture : 4 baskets with a capacity of 500 grams of potatoes each is required to hold all the 2000 grams Thus taking 2000 as dividend and 500 (the basket containing 2000 gms of potatoes) as divisor the quotient was derived by the division process Since, 4 time of 500 is 2000, so, 2000 ÷ 500 = 4 baskets were needed

Therefore, if each basket contains 500 gms. potatoes, then 4 baskets will be needed to keep 2 kg. of potatoes.

ACTIVITY SHEET - 24

Problem Class : Measure Conversion
Sub-Class : Division (by multiplicand)

Read the question and its analytical discussion given below

Question : A year has 12 months How many years are there in 48 months ?

Analysis of the Question	Response Steps
a) How many months do make a year ?	a) 12 months make a year
b) If 12 months make a year, how many years do 24 months make ?	b) As 2 times of 12 is 24, that is 24 - 12 = 2 That means 24 months make 2 years
c) If 12 months make a year, how many years do 36 months make ?	c) As 3 times of 12 is 36, that is 36 ÷ 12 = 3 That means 36 months make 3 years
d) If 12 months make a year, how many years do 48 months make ?	d) As 4 times of 12 is 48 that is 48 ÷ 12 = 4 That means 48 months make 4 years
e) Write the answer of the given question	e) If a year has 12 months, then 48 months is 48 - 12 = 4 So, 4 years has 48 months

Workout question from No 1 to 4 by yourself in shortcut method as has been shown above in response step (e)

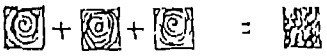
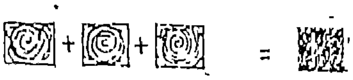
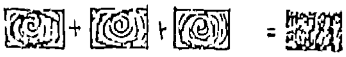
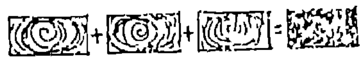
Sl No	Questions	Space for writing your Answer
1	If one minute has 60 seconds, how many minutes will be equal to 180 seconds ?	
2	If one week equals to 7 days, how many weeks will 140 days make ?	
3	One litre of kerosene measures 1000 ml how many liters are there in 6000 ml of kerosene ?	
4	If 4 hours is equal to 240 minutes how many minutes will be equal to 3 hours ?	

ACTIVITY SHEET - 25

Problem Class : Multiplicative Conversion
Sub-Class . Multiplication Problem

After reading the following question, look at the pictures given below one by one

Question : The weight of same volume of a piece of iron is 3 times heavier than that of a piece of wood If a piece of wood weights 5 kg, what is the weight of apiece of iron of same volume?

Pic ture	What is the weight of wood in kg ?	How many pieces of wood are equal to one piece of iron having same volume in weight?	What is the weight of iron ?	How will you write the answer in multiplication process ?
1st	 1 Kg	 1kg + 1kg + 1kg = 3 Kg Weight of 3 pieces of wood = Weight of 1 piece of iron	(1 + 1 + 1)Kg = 3 kg	1x 3 = 3 3 Kg
2nd	 2 Kg	 2kg + 2kg + 2kg = 6 kg Weight of 3 pieces of wood = Weight of 1 piece of iron	(2 + 2 + 2)Kg = 6 kg	2x 3 = 6 6 Kg
3rd	 3 Kg	 3kg + 3kg + 3kg = 9 kg Weight of 3 pieces of wood = Weight of 1 piece of iron	(3 + 3 + 3)Kg = 9 kg	3x 3 = 9 9 Kg
4th	 4 Kg	 4kg + 4kg + 4kg = 12 kg Weight of 3 pieces of wood = Weight of 1 piece of iron	(4 + 4 + 4)Kg 12 kg	4x 3 = 12 12 Kg
5th	 5 Kg	 5kg + 5kg + 5kg = 15 kg Weight of 3 pieces of wood = Weight of 1 piece of iron	(5 + 5 + 5)Kg = 15 Kg .	5x 3 = 15 15 Kg

What did you know from the pictures ? Let us read the following.

1st Picture · Each piece of wood weighs 1 kg and the weight of iron being 3 times heavier, the weight of 3 pieces of wood is equal to the weight of one piece of iron To find the weight of the iron piece we need to multiply, 1 (multiplicand) x 3 (multiplier) = 3 So, the weight of the piece of iron having same volume as of wood pieces is 3 kg

2nd Picture : Each piece of wood weighs 2 kg and the weight of iron being 3 times heavier, the weight of 3 pieces of wood is equal to the weight of one piece of iron To find the weight of the iron piece we need to multiply, 2 (multiplicand) x 3 (multiplier) = 6 So, the weight of the piece of iron having same volume as of wood pieces is 6 kg

3rd Picture . Each piece of wood weighs 3 kg and the weight of iron being 3 times heavier, the weight of 3 pieces of wood is equal to the weight of one piece of iron To find the weight of the iron piece we need to multiply, 3 (multiplicand) x 3 (multiplier) = 9 So, the weight of the piece of iron having same volume as of wood pieces is 9 kg

4th Picture : Each piece of wood weighs 4 kg and the weight of iron being 3 times heavier, the weight of 3 pieces of wood is equal to the weight of one piece of iron To find the weight of the iron piece we need to multiply, 4 (multiplicand) x 3 (multiplier) = 12 So, the weight of the piece of iron having same volume as of wood pieces is 12 kg

5th Picture · Each piece of wood weighs 5 kg and the weight of iron being 3 times heavier The weight of 3 pieces of wood is equal to the weight of one piece of iron To find the weight of the iron piece we need to multiply, 5 (multiplicand) x 3 (multiplier) = 15 So the weight of the piece of iron having same volume as of wood prices is 15 kg

Therefore, if the weight of a piece of wood is 5 kg, then 3 times of of the same volume of iron piece will be 15 kg

ACTIVITY SHEET - 26

Problem Class : Multiplicative conversion
Sub-Class : Multiplication Problem

Read the question and its analytical discussion given below

Question · Rama's sister saves 4 times of money that Rama saves in a month If Rama saves 21 rupees in a month, how much does his sister save in the month ?

Analysis of the Question	Response steps
a) What does Rama save in a month ?	a) Rama saves 21 rupees in a month
b) What does Rama's sister save in comparison to Rama ?	b) Rama's sister saves 4 times of Rama
c) How will you know the monthly saving of Rama's sister ?	c) To know the savings of Rama s sister we have to add 4 times of 21 rupees which is Rams s saving Rs 21+ Rs 21 + Rs 21+ Rs 21 = 84 rupees
d) How will it be known in other way ?	d) It will be known from the product of 21 as multiplicand and 4 as multiplier So 21 x 4 = 84 This means Rama's sister saves 84 rupees in a month
e) How will you write the answer of the above question in a short cut process ?	e) Rama's sister saves 4 times of his saving in a month if Rama saves 21 rupees per month his sister will save Rs 21 x 4= 84 rupees per month

Workout questions from 1 to 4 by yourself shortcut method as has been shown above in response step (e)

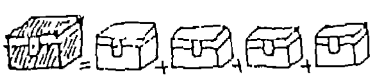
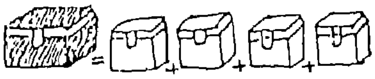
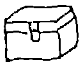
Sl No	Question	Space for writing your answer
1	The weight of wood is 8 times heavier than that of a cork If a cork weighs 10 gram what will be the weight of a price of wood of same volume ?	
2	The weight of a piece of aluminium is 3 times of a piece of wood of same volume If a piece of wood weights 5 grams what will be the weight of a piece of aluminium ?	
3	Between two coconut trees the height of the old one is 9 times higher than that of the new one If the height of the new one is 4 feet, what will be the height of the old one ?	
4	A piece of gold weighs 4 times heavier than a piece of copper If the copper piece weighs 6 gram what will be the weight of a gold piece ?	

ACTIVITY SHEET - 27

Problem Class : Multiplicative Conversion
Sub-Class : Multiplication Problem

After reading the following question, look at the pictures given below one by one

Question ·The weight of an iron box is 4times heavier than a wooden box of same size If the iron box weighs 16 kilograms, what will be the weight of the wooden box ?

Picture	What is the relation in weight between the iron box and the wooden box given in the picture ?	What is the weight of the iron box?	The weight of how many wooden boxes is equal to the weight of the iron box?	What is the weight of a wooden box?	How to write the answer in division?
1st	Wood Iron 1 kg 4 kg	 Weight of the iron box is 4 kg	 4 kg = 1kg + 1kg + 1kg 1kg 4 wooden boxes	 1 kg	4kg ÷ 4 = 1 kg
2nd	Wood Iron 2 kg 8 kg	 Weight of the iron box is 8 kg	 8 kg = 2kg + 2kg + 2kg 2kg 4 wooden boxes	 2 kg	8kg ÷ 4 = 2 kg
3rd	Wood Iron 3 kg 12 kg	 Weight of the iron box is 12kg	 12 kg = 3kg + 3kg + 3kg 3kg 4 wooden boxes	 3 kg	12kg ÷ 4 = 3 kg
4th	Wood Iron 4 kg 16 kg	 Weight of the iron box is 16kg	 16 kg = 4kg + 4kg + 4kg + 4kg 4 wooden boxes	 4 kg	16kg ÷ 4 = 4 kg

What do you know from the pictures ? Let us read the following·

1st Picture : If the weight of the wooden box is 1 kg the weight of the iron box will be 4 kg The weight of the iron box being 4 kg, it became equal to the weight of 4 wooden boxes So to know the weight of a wooden box, division will be done taking 4 kg as dividend and 4 as divisor since 1 x 4 = 4, so 4 – 4 = 1 That means the weight of the wooden box is 1 kg

2nd Picture : If the weight of the wooden box is 2 kg the weight of the iron box will be 8 kg The weight of the iron box being 8 kg it became equal to the weight of 4 wooden boxes So to know the weight of a wooden box division will be done taking 8 kg as dividend and 4 as divisor since 2 x 4 = 8 so 8 – 4 = 2 That means the weight of the wooden box is 2 kg

3rd Picture If the weight of the wooden box is 3 kg the weight of the iron box will be 12 kg The weight of the iron box being 12 kg it became equal to the weight of 4 wooden boxes So to know the weight of a wooden box, division will be done taking 12 kg as dividend and 4 as divisor since 3 x 4 = 12, so 12 – 4 = 3 That means the weight of the wooden box is 3 kg

4th Picture · If the weight of the wooden box is 4 kg the weight of the iron box will be 16 kg The weight of the iron box being 16 kg, it became equal to the weight of 4 wooden boxes So to know the weight of a wooden box, division will be done taking 16 kg as dividend and 4 as divisor since 4 x 4 = 16, so 16 – 4 = 4 That means the weight of the wooden box is 4 kg

Therefore if the weight of iron box is 16 kg, then the weight of same volume of wooden box will be 4 kg.

ACTIVITY SHEET - 28

Problem Class Multiplicative Conversion
Sub-Class : Division (by Multiplier)

Read the question and its analytical discussion given below

Question : The weight of a rice bag is 5 times heavier than that of a baked rice bag having same volume If the weight of the rice bag is 100 kg what will be the weight of the baked rice ?

Analysis of the question	Response Steps
a) In between the same volume of rice bag and a baked rice bag, which is heavier ?	a) The rice bag is heavier than the baked rice bag
b) How many times heavier is the rice bag than the baked rice bag ?	b) The rice bag is 5 times heaviert han the bake drice bag
c) What is the weight of the rice bag given in the question ?	c) The weight of the bag is 100kg
d) Give the reason how will you find out the weight of the baked rice bag form the weight of the rice bag given in the question ?	d) As the weight of the rice bag is 5 times heavier than the baked rice bag, one can think of a number whose 5 times makes 100 kg
e) How will you find out the weight of the baked rice bag ?	e) As 20 x 5 = 100 and 100 ÷ 5 = 20 so the weight of the baked rice bag will be 20 kg
f) How will you write the answer in short ?	f) The weight of the rice bag is 100 kg As the weight of the rice bag is 5 times heavier, the weight of the baked rice bag is, 100kg ÷ 5 = 20 kg

Workout questions from 1 to 4 by yourself in shortcut method as has been shown above in response step (f)

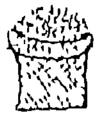
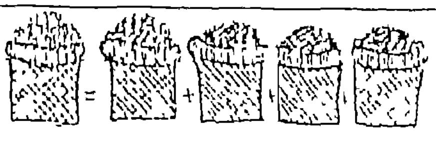
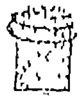
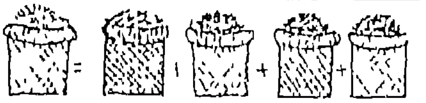
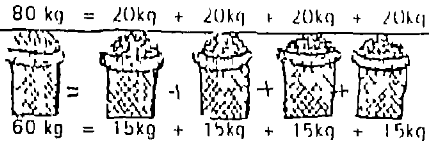
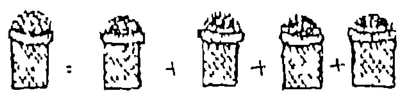
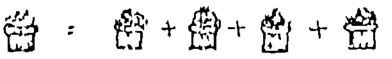
Sl No	Question	Space for writing your answer
1	Between two ladders the length of the longer one is 3 times of the shorter one if the longer ladder is 15 feet, what will be the length of the shorter one ?	
2	The weight of a piece of lead is 3 times heavier than that of a piece of aluminium sheet If the lead weighs 105 kg what will be the weight of aluminium sheet ?	
3	In measuring two sticks in span measure, one stick is 5 times more than the other one If the bigger stick is 45 spans, how many spans will be the smaller one?	
4	The father's age is 4 times than the son's age If the father's age is 44 years, what will be the son's age ?	

ACTIVITY SHEET - 29

Problem Class : Multiplicative Conversion
Sub-Class · Division (by Multiplicand)

After reading carefully the question given below see the given pictures one after another

Question . If the weight of one bag rice and one bag husk is 100 kg and 25 kg respectively, how many times the rice bag is heavier than that of husk bag ?

Picture	What is the weight of the bag of husk ?	What is the weight of the bag of rice?	The weight of how many bags of husk is equal to the weight of a rice bag?	How many times heavier is the rice bag than the husk bag?	How to write the answer in division process?
1st	 25 kg	 100 kg	 100 kg = 25kg + 25kg + 25kg + 25kg	25 kg×4 = 100kg 4 times	100 ÷ 25 = 4 4 times
2nd	 20 kg	 80 kg	 80 kg = 20kg + 20kg + 20kg + 20kg	20 kg×4 = 80kg 4 times	80 ÷ 20 = 4 4 times
3rd	 15 kg	 60 kg	 60 kg = 15kg + 15kg + 15kg + 15kg	15 kg×4 = 60kg 4 times	60 ÷ 15 = 4 4 times
4th	 10 kg	 40 kg	 40 kg = 10kg + 10kg + 10kg + 10kg	10 kg×4 = 40kg 4 times	40 ÷ 10 = 4 4 times
5th	 5 kg	 20 kg	 20 kg = 5kg + 5kg + 5kg + 5kg	5 kg×4 = 20kg 4 times	20 ÷ 5 = 4 4 times
6th	 1 kg	 4 kg	 4 kg = 1kg + 1kg + 1kg + 1kg	1 kg×4 = 4 kg 4 times	4 ÷ 1 = 4 4 times

What did you know from the picture ? Let us read the following :

1st Picture: The weight of 4 bags of husk is equal to the weight of one rice bag The weight of one bag of rice is 100 kg and the husk is 25 kg As 25 x 4 = 100, so 100 - 25 = 4 That means the weight of the rice bag is 4 times heavier than the weight of the husk bag

2nd Picture: The weight of 4 bags of husk is equal to the weight of one rice bag The weight of one bag of rice is 80 kg and the husk is 20 kg As 20 x 4 = 80, so 80 - 20 = 4 That means the weight of the rice bag is 4 times heavier than the weight of the husk bag

3rd Picture: The weight of 4 bags of husk is equal to the weight of one rice bag The weight of one bag of rice is 60 kg and the husk is 15 kg As 15 x 4 = 60, so 60 - 15 = 4 That means the weight of the rice bag is 4 times heavier than the weight of the husk bag

4th Picture The weight of 4 bags of husk is equal to the weight of one rice bag The weight of one bag of rice is 40 kg and the husk is 10 kg As 10 x 4 = 40, so 40 - 10 = 4 That means the weight of the rice bag is 4 times heavier than the weight of the husk bag

5th Picture The weight of 4 bags of husk is equal to the weight of one rice bag The weight of one bag of rice is 20 kg and the husk is 5 kg As 5 x 4 = 20, so 20 - 5 = 4 That means the weight of the rice bag is 4 times heavier than the weight of the husk bag

6th Picture The weight of 4 bags of husk is equal to the weight of one rice bag The weight of one bag of rice is 4 kg and the husk is 1 kg As 1 x 4 = 4, so 4 - 1 = 4 That means the weight of the rice bag is 4 times heavier than the weight of the husk bag

Therefore, if the weight of same volume of rice bag and husk bag are 100 kg and 25 kg respectively, then the weight of rice is 4 times than that of the husk bag.

ACTIVITY SHEET - 30

Problem Class . Multiplicative Conversion
Sub-Class · Division (by Multiplicand)

Read the question and its analytical discussion given below

Question : If the weights of same volume of a cricket ball and a rubber ball are 600 gm and 100gm respectively, then the cricket ball is how many times heavier than that of the rubber ball ?

Analysis of the Question	Response Steps
a) In between the same volume of cricket ball and rubber ball, which is more heavier ?	a) The weight of the cricket ball is more heavier
b) What are the weights of cricket ball and rubber ball given in the question ?	b) The weight of the cricket ball is 600 gm and rubber ball is 100 grams
c) What has been asked to find out in the question ?	c) It has been asked to find out how many times heavier the cricket ball than that of the rubber ball
d) How to find out how many times heavier the weight of the cricket ball having 600 gm and the rubber ball having 100 gms ?	d) To find out divide 600 grams by 100 grams
e) How many times heavier is the weight of cricket ball to that of the rubber ball ?	e) Since 100 x 6 = 600 So 600 ÷ 100 = 6 that means the weight of the cricket ball is 6 times heavier than that of the rubber ball
f) How will you write the answer of the question in short method ?	f) The weight of the cricket ball and the rubber is 600 grams respectively The weight of cricket ball is, 600 - 100 = 6 times heavier

Workout questions from 1 to 4 by yourself in shortcut method as has been shown above in response step (f)

Sl No	Question	Space for writing your answer
1	Between 2 bamboos the length of the longer one and shorter one are 32 cubits and 8 cubits respectively How many times long is the longer bamboo than that of the shorter bamboo ?	
2	An iron piece and a cork of equal volume weight 76kg and 4 kg respectively How many times heavier is the iron piece than that of the cork ?	
3	Madhu bought 2 pieces of rope 90 feet and 15 feet long each How many times more is the longer rope as to that of shorter one ?	
4	Between two packets of books received through postal parcel, One weighs 95 kg and the other 19 kg How many times heavier is the weight of the bigger packet than the smaller packet ?	

Form II

DIAGNOSTIC PROBLEM TASK ON MULTIPLICATION & DIVISION FOR CLASS - III

Your Name ....
Sl. No. ....

INSTRUCTION

Read each of the 15 questions one after another given below before answering them. Write the answers to each question one by one with all the steps in detail in the answer space provided for each question Even if you feel that you cannot answer correctly any question, still you write all that you think or guess about the answer to the same Do not leave any question unanswered. This test result is not for your progress report We are interested in your right as well as wrong answers to help you learn better. So feel happy and comfortable while answering. Take your own time but try to complete the task as quickly as possible

Sl No	Questions	Space for writing Answer	Remarks
1	If 7 oranges are given to each child how many total oranges will 6 children get?		
2	If 40 bags of cement are carried equally in 5 bullock carts, how many bags of cement are carried in each bullock cart ?		
3	If a fish is cut into 8 pieces, from how many such fishes, 56 pieces of fish can be available ?		
4	Each packet holds 2 kg of flour How much flour can be packed in 12 such packets ?		

5 If 35 liters of kerosene are there in 7 equal tins, how much kerosene holds in each such tin ?

6 In how many poly packs 45 liters of mustard oil can be kept If each pack can hold 5 liters of oil ?

7 Running at a rate of 43 k m per hour how far a rail train go in 3 hours without stopping anywhere ?

8 If 9 kilograms of rice is available in Rs 72/- what is the cost of one kilograms of rice?

9 If one dozen of banana costs Rs 12/- then how many dozens of banana will be available for Rs 72/-

10 60 seconds is 1 minute If the sun's ray reaches the earth in 8 minutes, then in how many seconds it will be seen in the earth aafter sun rise ?

11 If the length of a rope in centimetres is 900 and in meters it is 9, then a meter is equal to how any centimetres?

12 A week is 7 days Then how many weeks is 84 days ?

13 Hari's sister saves 5 times of money that Hari saves in a month If in a month Hari saves Rs 11/- then how much his sister saves in the same month?

14 Between two rail parcels the weight of the first is three times the weight of the second, if the first parcel weights 39 kg then how much is the weight of the second parcel ?

15 An alluminium rod of one meter long weights 63 grams If a plastic rod of same length and size weights 9 grams how many times aluminium is heavier than plastic ?

Each correct answer carries 1 mark

For Teacher / Evaluators .

After scoring the answer papers of children the Teachers/ Evaluators are advised to interview the children individually for each of their wrong answers While interviewing please write your observations against each such wrong answers about the following

Whether the child

(i) Can read the question ?

(ii) Can tell the given data in the question ?

(iii) Can explain his/her solutions ?

(iv) Can able to locate his / her mistakes ?

(v) Can understand how to answer correctly after mistakes are corrected ?

(vi) Can verify the answer with the data in question ?

and (vii) Any others you need to ask to reveal their thought process.

FACILITATING ROLE OF THE TEACHER IN ORGANISATION OF COMPETENCY- BASED JOYFUL ACTIVE LEARNING IN LARGE SIZED CLASSES

Prof. D. K. Bhattacharjee

Training/ Learning Objectives

At the end of the training, you should be able ·

1 to conceptualise the facilitating role of teachers in organisation of competency based joyful active learning in Large Sized Classes

2. to understand how these roles are to be operationalised in actual classroom during organisation of teaching- learning in any subject of any class

Training Content

Activity 1 : Brain Storming Group Session

Divide yourself into four groups. Group Leaders are to consolidate the group view points. Read the following text very carefully

THE TEXT

Facilitating Role of the Teacher in Organisation of Competency based joyful Active Learning

Facilitating role of teachers in organisation of competency-based joufful active learning are highlighted below

* to understand abilities/skills to be developed in children and concepts to be attained by them through operationalisation of competency - based teaching

* to formulate learning objectives/goal (individual/group, cooperative/ competative)
* to define learning outcome in terms of concept attainment and ability development
* to make class size setting conducive to activity
* to clarify students task in designing activity in group situation and in self learning situation
* to arrange support system/ materials for activity
* to demonstrate skill acquisition process/ display of aids
* to issue instructions to operationalise group activity
* to impart training to peers/ seniors on procedure of helping other students in the activity
* to ensure space management in large sized class room
* to formulate strategies to motivate students in group and self learning activities
* to facilitate democratic classroom practices/ procedure to extend learning time to home
* to formulate strategies for remediation / enrichment
* to formulate strategies to maintain high engagement rates during activity
* to acquaint to child with his basic worth / competency
* to inculcate confidence in children by giving praise, encouragement and assurance that love will not be withdrawn in the absence of good performance

- environment building/ setting the environment
- to coordinate and monitor group learning and self-learning
- to help the child to locate/ use learning resources
- to organise variety of activities - to prepare activity bank
- to adjust task difficulty to individual differences during group learning
- to ensure flexible allocation of time to various activities to encourage activities in groups to ensure participation / to manage learning time
- to integrate affective development with subject areas during group activity
- to ensure that students show respect for other races/ ethic origin/ social classes
- to reinforce appropriate behaviour in class room with the help of monitor/ group leader
- to encourage students to resolve conflicts
- to impress the students that they are playing a unique role in team and the team can not succeed without their cooperation and participation
- to distribute various works to students during group work such as playing of taperecorder/ calculator, playing roles of checker/ reporter/ material handler/ encourager of the participants
- to make each student responsible for specific part of the group work
- to make the group accountable to each member
- to ensure that collaborative rather than competitive mode should dominate group work

* to respect and nurture of what is unique in every child
* to evolve collaborative mechanism for working between parents/ teachers and community members - to ensure partnership with parents - to share information with parents
* to meet all aspects of developmental needs of the children
* to promote equality in learning opportunity and learning choices
* to use language which is appropriate and accessible to learner
* to evaluate individual and group performance

Reflect on the following issues through group discussion
Group leader will consolidate the group view points

1 List out five performance competencies of the teacher to make the classroom setting conducive for group activity

2 Identify five strategies you would like to adopt for motivating the students in group learning

3 How would you adjust task difficulty to individual differences during group activity Mention three strategies

4 Ho would you integrate affective development of students with subject areas during group activity ? Give three concrete examples

5. How would you like to make each student responsible for his own learning? Discuss five strategies

6. How do you propose to promote equality in learning opportunity and learning choices in large sized classroom ? Give five examples

7 How would you facilitate democratic classroom practices Give five examples.

8. How would you balance individual need with needs of the group? Give three examples

9. How would you encourage students to resolve conflicts? Identify three strategies.

All group view points will be finally consolidated by group leaders and will be moderated by resource faculty

MATERIAL DEVELOPMENT FOR TEACHING - LEARNING IN PRIMARY SCHOOLS WITH LARGE SIZED CLASSES

Training/Learning Objectives

At the end of training, you should be able .

1 to conceptualise different types of materials required for teaching-learning in large sized classes

2. to understand the characteristics of materials

3. to acquire skills in developing concept centred materials in different subjects

Training Content

Activity 1 : Reflective Group Discussion

Divide yourself into convenient groups, Group leaders are to prepare group reports Consolidated group reports will be presented before the trainers. Read the following text in the group

The Text

Different types of materials will be required for effective teaching-learning in large sized classes. These are

* materials for whole class teaching

* materials for group learning in different subject areas to be handled by students

* materials for self-learning to be handled by students, for example remedial self-learning activity sheets, work sheet for drill etc.

* materials for teachers/ students demonstration in groups

* materials for creative activities in group situation

Characteristics of Materials

In rural schools teachers with the help of students can prepare a large number of materials

- Emphasis can be given on preparation of low cost or no cost materials
- Learning materials should be easily accessible to all children of the groups during group learning
- Learning materials should be attractive so that the students become curious
- Materials should match the maturity level /cognitive level learners
- Materials should be available to all grades/ teaching - learning of all subject areas
- Materials could be derived from the natural environment of the child
- Materials developed for group learning or self-leaning should help in developing concepts and acquiring skills/ abilities/ competencies

Types of Material

In addition to procured materias low cost/ no cost materials should be developed out of available local resources. Resources available in the immediate natural environment of the schools should also be taped by the teacher and used in the classroom. Some examples are given below

- All materials included in Operation Blackboard
- stones, leaves, sticks, soil etc available in the local environment could be used for seriation, counting, addition, subtraction
- hand made models prepared by the children
- real objects collected from the environment

- papers/ colour/ pencil/ erases/ cards/ scissors
- chart showing words/alphabets / geographical features
- preparation of flash cards for multi-purpose use
- three blackboards in classroom for classes III to V
- tape recorder, if available
- maps/ globes/ charts/ models/ pictures
- letter cards for multipurpose use
- collection of material through field trips in local community situations
- large calender
- preparation of different geometrical shapes like triangle/ rectangles/ circle/ semicircle out of wood, paper board etc
- tag board charts/ graphs
- scales/ measuring tapes
- large drawings of square/circle rectangles /triangles made on wrapping paper or chalkboard
- collecting clippings from magazines and newspapers
- various forms of vehicles e.g. bus, train, aeroplane, bullock cart may be prepared by use up match boxes paper board boxes, meant for shoes, cloth and other articles.

Material collection from Intermediate Environment

The teachers and the students can collect the following no-cost materials from the immediate environment of the school very easily Parents may also cooperate with their words in collection of these materials

1 leaves of varied forms,

2 flowers of varied colours

3. seeds

4 feathers of various birds

5. lumps of soil of varied nature colour

6 tamarind - seeds

7 stone - chips

8 grails

9 handful of sand

10 A small and thin log of wood sticks

The materials could be utilised for whole class traching/ group learning/ self - learning in the following manner :

1. Sl. No 1 may be use for identification of simple and compound leaves and naming of different parts of leaves
2 Sl. No 2 may be used for identification of various flowers
3. Sl No 3 may be used for identification of various seeds
4. Sl No. 4 may be used for detection of birds by their feathers
5 Sl. No. 5 may be used for classification of soil.
6 Sl No 6 may be used for counting, addition, substraction, multiplication and division
7 Sl No. 7 and 8 may be used for arithmetic lessons.
8 Sl No. 9 may be used to spread over the floor of the class and to write alphabet by fingures as well as to draw simple geometrical figures eg straight line, curve, circle etc
9 Sl. No. 10 may be used for measuring class - room materials after standardising it by a measuring tape

Activity 3 : Practice

Devide yourself into groups Each group should contain two teachers Choose and prepare only materials out of the following list with the help of simple instruments

1 letter cards for teaching diffecult words

2. flash cards for use in reading words, arranging words to form sentences

3 prepare pictures with reference to various stages of a story

4 prepare pictures with words for matching words with pictures

5. prepare charts showing strokes and combination of strokes for drill of alphabets in class I

6 flash card showing mark of punctuation

7 chart showing store, spacing and sequence of alphabets, words, sentences

8 various geomatrical figures using paper boards their wood pieces

TRAINING PROGRAMME EVALUATION

Training/ Learning Objectives

At the end of the training/ learning, you should be able to

1 understand the dimensions of evaluation of training programme

2 make a review of an exemplar tool disigned for evaluation of training programme

Training Content

Activity 1 : Group Session

Diving yourself into three groups Group leaders will consolidate the outcome of the group work. Read the following text carefully

The Text

Evaluation/ Measurement of training should take note of the following aspects

1. Trainee's evaluation of the programme design, the trainer's performance and training action.

2 Impact of training on learners achievement

3 Impact of training on school environment/ organisation

Four point scale may be formulated to measure the effectiveness of the trainer, effectiveness of traning design and assessment of training actions In order to measure training the impact baseline data is required. While studying impact of training, impact of hard 'competencies'

and soft competencies may be undertaken separately Time, output, quality and cost are four condideration for studying the impact of a programme

Critically examine exemplar tool designed for evaluation of training programme and reflect on the following uses

1. Do you agree with the items of exemplar tool designed for evaluation of training programme ? If not, suggest modification.
2. Should we evaluate any other dimension apart from programme design, the performance of the trainer and action assessment ? If yes, justify the inclusion of additional dimensions

THE TEXT

EXEMPLAR TOOL FOR TRAINING PROGRAMME EVALUATION

Introduction

1 You may feel free to give your opinion about the trainers and the transaction of training programme. Your response will be kept strictly confidential

2 Put (✓) mark against only one appropriate response

Personal Data

1 Name of the participant

2. Full postal address of the Institution in which you are working at present .

3 Sex · Male / Female

4. Age (in completed years)

5 Educational Qualifications .

6. Teaching Experience in completed years

11 quality of demonstration of performance competencies on operationalisation of interventions/ strategies 1 2 3 4

12. indicate strong and weak points of the programme

Strong points (In order of importance)

1.
2.
3
4
5

Weak points (In order of importance)

1
2
3
4
5

Evaluation of Trainers

		Poor	Average	Good	Excellent
	Trainer's were able to				
1	show mastery over training content	1	2	3	4
2	use participatory democratic transaction mode	1	2	3	4
3.	use examples / analogies to enhance interest and motivation of the trainees	1	2	3	4
4	use time effectively	1	2	3	4
5	ask provoking questions to stimulate participants in discussion		2	3	4
6.	ask questions to verify learning, maintain high level of interaction with trainees	1	2	3	4
7	solve the learning difficulties of the trainers	1	2	3	4
8	give demonstration	1	2	3	4
9	use gesture, body movement and eye contact	1	2	3	4
10	use overheads and transparencies	1	2	3	4
11	highlight process of operationalisation of multiple interventions/ strategies	1	2	3	4
12	guide the practicals on preparation of tool/ tests	1	2	3	4
13	overall rating of the trainers	1	2	3	4

ACTION ASSESSMENT

1	How the concepts' and performance competencies/ skills covered in this programme would be useful to your job as a classroom teacher ?	Not Useful	Mostly Useful	Somewhat Useful	Very Useful
		1	2	3	4
2.	How well did the training prepare you for on the job work in primary school with large sized classes	Poor	Fair	Good	Outstanding
		1	2	3	4
3	Whether any extra training you need to implement the strategies/ interventions	A lot	Some	A little	None
		1	2	3	4
4	Overall, how confident you would be with the strategies	Not Confident	Somewhat Confident	Mostly Confident	Very Confident
		1	2	3	4